A RESOURCE MANAGEMENT PLAN

FOR

INVENTORY AND RESEARCH

IN THE

PRINCE RUPERT FOREST REGION

2000 – 2001
DRAFT 1.0ctober 1999

Ministry of Forests

Foreword or Preface

This Plan is prepared in response to the Ministry of Forest's and Ministry of Environment Lands and Park's Services Agreement's with Forest Renewal BC (FRBC).

The Ministries are required, for FRBC's Strengthening Sustainable Forest Management Objective to establish a resource management plan for the region which identifies:

- regionally significant knowledge gaps;
- the strategic or operational planning decision making process and authority that have identified the gap,
- the work required to fill the knowledge gap;
- the location of the work;
- the budget required to perform the work; and
- the relative priority of the work required based on regionally significant issues.

Included in the RMP are:

- The planning and ranking processes used for activities;
- A summary of all activities in a spreadsheet format by district;
- Appendices which provide the supporting documentation of the stakeholder/proponent consultation process; and
- Appendices which provide the supporting documentation in Timber Supply Reviews and Strategic Level Plans considered in assessing priorities.

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1.0 INTRODUCTION

The following document is a Resource Management Plan for the Prince Rupert Forest Region for activities that meet the Strengthening Sustainable Forest Management (SSFM) objective of Forest Renewal BC. This plan provides the strategies and related objectives for managing the activities within the inventory and research program. These were developed in 1998, and remain relevant today. In addition, Forest Renewal BC has added emphasis for 2000 – 2001 on projects that directly relate to Land and Resource Management Plan or Timber Supply Review priorities.

The activities that are driven by the SSFM objective are largely inventories, but in some cases the work required is research. Most of the work can be categorised into the following general inventory areas:

Archaeology
Growth and Yield
Forest Health
Fish and Fish Habitat
Recreation
Traditional use Studies
Terrain Stability Mapping
Terrestrial Ecosystem Mapping
Vegetation (Forest Cover)
Water Quality and Water Quantity
Wildlife and Wildlife Habitat

This plans outlines the regional strategies and objectives for each of the above inventory areas. Opportunities (projects) to meet identified knowledge gaps within these inventory areas are identified in a spreadsheet format (Appendix 1). The strategic or operational planning decision and authority that have identified the knowledge gap are also identified. Costs and time to complete the project are given for the five year period from 2000 to 2004. All the projects are geographically located to the district level. Where inventories are more effectively implemented at a regional level because they cross administrative boundaries they are identified as regional projects.

Over recent years, virtually all the funding to complete these priorities is provided through the Skeena Region of Forest Renewal BC (FRBC) under their land-based programs. Although the Ministry of Forests (MOF) and the Ministry of Environment, Lands and Parks (MELP) have the mandate for administering the land base, almost all of the resource investments included in this plan are delivered by stakeholders other than these government ministries. This plan also identifies priorities that are not eligible for FRBC funding but are non the less high priorities from a resource stewardship perspective.

The ministries must provide FRBC and the other stakeholders guidance as to which activities are sound investments for achieving the resource management objectives. Often that includes considerations into the timing, quantity and location of the work in addition to the type of work that needs to be delivered
With this document for guidance, FRBC will be able to make better investment decisions. It will allow merging of the biological and land based needs of the natural resources with the socio-economic objectives of FRBC.

1.1 PURPOSE

This planning process addresses the priorities for inventory activities from the perspective of the need for the inventory to meet particular Strategic Land Use Planning process or a Timber Supply Review and the economic efficiency of a particular inventory activity. It is designed to provide guidance to FRBC, government agencies and other stakeholders in determining the best investments regardless of the funding source or who is actually completing the work.

The need for completing inventories can change with time and therefore the list of projects and their relative priorities are not static. Public policy directions at the local, provincial or international level often drive the need for more detailed or different information. Biological changes in the structure of the forest land base also modify information needs through time.

1.2 The Planning Process

The ground rules for developing the Resource Management Plan were determined jointly by the Ministries and Forest Renewal BC. The ground rules are used as a benchmark against which the plans will be evaluated, and include geographic units, process co-ordination, process participants, plan process and content, and conflict resolution .

Staffing constraints and time limitation made it difficult to use a face to face consultation to develop this RMP. This region did not choose to set up a committee to develop the RMP. However, plan and process was lead by the Regional Inventory Officer with input form MELP and MoF inventory specialists. The Regional Timber Supply Analyst, the Interagency Management Committee Process Co-ordinator provided input on TSR and LRMP issues and comments on the draft plan. MoELP staff were unable to provide much input after the proposal stage.

The process included the following steps and participants:
On July 16th the MoF region sent Multi-Year Agreement (MYA) holders, forest districts, MoELP and MoF regional inventory specialists a questionnaire asking for proposals for new and existing inventory or research projects (See appendix 3). The deadline for receiving these proposals was August 20th. Responses were not received from some MYA holders and agency staff until September 7th. The proposals were received in various formats (not necessarily the questionnaire format).

The information in the submissions was entered into a spreadsheet format (Appendix 1) and sent back as a draft to MYA holders, the districts, the regional specialists and FRBC on September 14th. Revisions on this draft were made based on all proponents who choose to provide input. District and regional agency staff were asked to rank priorities for various projects based on the provincial guidelines , local priorities, and existing projects. Input to the RMP was received up to, at and after the investment planning meetings in the first week of October.

The following is a summary of various consultations that took place:

- Bulkley: A meeting was held with the MoF district staff on September 15 to analyse their LRMP and TSR needs and the various projects submitted by the licensees. This was then

folowed by the investment planning meeting. There is still unresolved issues around what should be funded in this district.

- Kalum: a face to face meeting was held with the District Inventory Committee (a subset of the TSA steering committee) on September 22 and the various priorities for each project were weighed and proposed for funding based on whether a project was new or existing and the need for core inventories to meet general resource management issues. The Nisgaa raised concern at the investment planning meeting that they had not been invited to the September 22 meeting and that they disagreed with some of the priorities. MoELP believes that the existing Nisgaa inventoires need to be finished this year and are not recommending continuation. On this basis funding should be given to finish these inventories. This is an outstanding issue that has to be resolved between MoELP and the Nisgaa.
- Kispiox: A meeting was held on October 14 with SCI, MoELP wildlife staff and the district to develop a final list of priorities.
- Lakes: A follow up to the investment plan meeting was held on October 14. This meeting recommended funding priorities largely based on existing projects.
- North Coast: The investment plan meeting identified the broad priorities for funding and the district intends to follow up with licensees over the next few weeks.
- Morice: The priorities for funding are largely driven by the MYA holders existing projects. Licensees were concerned that there had not been a meeting around inventories. However, the region takes the view that it is up to the district or the licensee to arrange.

From the investment planning meetings projects that are likely to be funded from MYAs are identified in the RMP. It is hoped that over the winter months refinements to the RMP take place.

1.3 The Ranking Process

In 1998 there was no provincially endorsed, objective method for ranking inventories against each other based on relative priority. In the absence of that direction the Northwest Resources Inventory Committee (NWRIC) was directed to provide the lead role in the 1998 inventory resource management planning process by The Regional Management Team of the Prince Rupert Region MoF and Regional Executive of the Skeena Region of MoELP. Since that time a provincial committee has created a method to identify and rank priorities that closely mimics the one used in 1998 by NWRIC. That ranking process is outlined in *of the Guidelines for Developing Resource Management Plans 2000-2001- Appendix 3.*

The main criticism for of the 1998 Inventory RMP from FRBC was the lack of MYA holder participation. This was dealt with by soliciting proposed inventory projects from MYA holders and analysing these proposals using the provincial process.

MYA holders were asked during the solicitation process to provide their own ranking of individual projects. The stewardship agencies at region also gave their ranking based on the provincial direction to give priority based on knowledge gaps dealing with issues raised in Strategic Level Plans and Timber Supply Reviews. The MoF district staff were also solicited to allow their perspective on priority based on the provincial, regional and local issues. In some

districts this was again revisited by licensees, MoF and, in one district, MoELP staff. The recommendations for funding were then added to RMP spreadsheet.

Resource agencies (MoELP and MoF)and licensees may have different priorities and knowledge gaps. The resource agencies answer to the people of British Columbia as determined by public policy. The licensees answer to the share holders of their company as expressed by the company policy. Within both industry and agencies there are professionals who have a duty to their employer, the public and to the land and resources of BC. Sometimes there is conflict between meeting the objectives of the employer and the profession which may or may not be addressed by a planning process such as RMPs. This lack of consensus is reflected in the Appendix 1.

In many cases the stewardship priorities cannot be met with the funds available from FRBC. Funds are limited, or are tied up in existing projects that need to be completed or there is no agreement between the licensees/ MYA holders and the agencies over what should receive funding. It should be noted that this RMP is a work in progress and is likely to be modified over the next 6 months.

Inventory Strategies

2.0 Archaeology

There is a need throughout all TSAs to identify the location of historic sites and the historic uses of the land base and assess these in relation to their historic importance and values to cultural heritage. Failure to identify these could result in increased development costs, reduce the timber harvesting land base and resource management could be constrained. Proper site identifications and use assessments could reduce conflicts and improve management options. These are primarily aboriginal sites and uses but this activity is not restricted to those.
There are two types of archaeological inventories: Archaeological Overview Assessments (AOAs) and Archaeological Inventory Studies (AISs).

2.1 Objectives

The provincial objective for Archaeological inventories is to complete an Archaeology Overview Assessment for all forest districts and to complete Archaeology Inventory Studies where needed for the province over approximately 10 years. In some cases AIS may be important to provide calibration data for AOA models.

2.11 Strategies:

- Complete any management level Archaeological Overview Assessments already in process in the Prince Rupert Forest Region.
- Examine the need for further AOAs by district in Prince Rupert Forest Region.
- Complete AOAs at the district level as necessary.
- AIS will not be recommended for funding in this region unless they are to provide calibration data for AOAs.

2.2 Opportunities

See Appendix 1

3.0 Growth and Yield

G&Y provides information on how the quantity, quality and composition of our forest changes over time. The future composition of the forest in-turn affects many strategic decisions regarding management of the land base including; biodiversity, old growth, wildlife habitat, harvesting volumes and values, green-up, visual aesthetics, etc. Most G&Y data is obtained through field sampling and this information is then used for calibrations to computer models and analysis tools. Failure to maintain existing data such as Permanent Sample Plots (PSPs) and to improve or localize other data such as Operational Adjustment Factors (OAFs) can have significant impacts on TSR decisions and implementation of LRMP decisions.

G&Y is also used as the catch all for stand modelling and decision making tools.

3.1 Objectives

To provide accurate growth and yield estimates for the Northwest Region of BC. Licensees and governments agencies must co-ordinate effort in order to:

- provide accurate estimates of forest productivity;
- establish and remeasure permanent sample plots to monitor growth and mortality rates;
- determine the impact of diseases, insects, animals and natural causes on the growth and yield of our forests;
- meet provincial growth and yield needs as identified by the Forest Productivity Council of BC.

3.11 Strategies:

- Complete Remeasurement of Permanent Sample Plots (PSPs) on planned ten year cycle.
- Complete Site Index - Biogeoclimatic Classification Sampling(SIBEC), Represented vs. Potential Site Studies, Years to Green Up studies, Operational Adjustment to Site Index studies based on need to address SLUPs and TSRs.

New permanent sample plot establishment was not considered as they do not rate high enough on the Forest Productivity Council of BC's priorities.

3.2 Opportunities

See Appendix 1

4.0 Forest Health

4.1 Objectives

The strategic objective of forest health inventory activities is the completion of an annual summary of forest health conditions for the province, to develop and refine ecologically based hazard and risk rating systems for major forest health problems to support recommendations in Forest Practices Code guidebooks, and to provide better estimates of pest impacts for Timber Supply analyses.

Other activities that may be recommended are surveys of locally important pest species as determined by the MoF district or regional Forest Health Specialists, based on stands at risk, potential impacts, the current level of information, and opportunities for management, as well as surveying and identifying areas that may need treatment at the landscape level for conditions such as root diseases and bark beetles. These surveys are at a scale where they are used for planning purposes rather than directing operational treatments. Assessments and other actions required by the *Forest Act*. by silviculture practices regulations (e.g., silviculture prescription requirements), or by the district manager are not recommended.

4.11 Strategies:

In addition to the provincial ranking the following criteria will also be considered in ranking Strategic Forest Health Inventory projects within the Prince Rupert Forest Region:

- Fibre Flow - harvesting priorities may be based on landscape level FHIs in order to capture volume at greatest risk (bark beetle kill, high hazard timber types due to age class, species composition and presence of Tomentosus root rot, etc.) Landscape level forest health assessments as required for FDPs will to some extent dictate which areas are inventoried first.
- The needs of individual Districts for Forest Health Inventories depends on the inherent severity of forest health factors in the District- **High**: Lakes, Morice, Bulkley portion of Bulkley-Cassiar, Kispiox **Moderate**: Kalum **Low**: North Coast and Cassiar portion of the Bulkley-Cassiar.
- Adherence to Regional funding priorities for Forest Health Concerns in the Prince Rupert Forest Region, dated Sept. 24, 1996. (see Appendix 4)

The following table outlines the forest pests of greatest concern in the Prince Rupert Forest Region. Forest health research and Inventories funded by FRBC should focus on the following forest pests.

Topic Forest Pest	**Priority**	**Issue**	**Scope**	**Specific Question**
Pests of Intensively Managed Stands	High	Impact of insects and disease in these high investment stands	Province wide	• population dynamics of insects attacking pruned stands
Tomentosus Root Disease (*Inonotus tomentosus*)	High	Impact on timber supply in Kispiox, Bulkley, Morice and Lakes TSA's	North Interior	• incidence on landscape level • implications of survey thresholds • management options
Pine Stem Rusts (*Endocronartium harknessii, Cronartium coleosporoides, Cronartium comandrae*)	High	Impact on timber supply in Bulkley, Morice and Lakes TSA's	North Interior	• landscape level incidence by TSA • Long term loss estimates • hazard and risk assessments for stands
Dwarf mistletoes (*Arceuthobium americanum, Arceuthobium tsugense*)	Med	Impact on timber supply in Lakes and Morice for lodgepole pine and in Kalum and North Coast for western hemlock	North half of Province	• landscape level incidence by TSA • Long term loss estimates • spread rates within stands

Decays	Med	Decay waste and breakage factors re-visited Scarring associated with partial harvests	Province Wide	• confirmation of existing volume reductions associated with pathological indicators • relationship of scarring to incidence of decay in partial harvests
Brown Cubical Decays (*Phaeoleus schweinitzii, Phomitopsis pinicola*)	Med	Impact on timber supply throughout region	North Interior	• landscape level incidence by TSA • Long term loss estimates • hazard and risk assessments for stands
Porcupines (*Erithizon dorsatum*)	Med	Impact on timber supply in Kalum and North Coast Districts	Coastal	• Landscape level incidence • operational adjustment factors for TS reviews
Western Balsam Bark Beetle (*Dryocetes confusus*)	High	Suggested significant impact on the timber supply in the Bulkley and Morice TSA's	Interior	• Extent of Damage • behaviour and population dynamics • timber utilisation studies • control methodologies
Mountain Pine Beetle (*Dendroctonus ponderosae*)	High	Suggested significant impact on the timber supply in the Bulkley, Morice and Lakes TSA's	Interior	• Leave strip management • Alternative single tree treatments • small brood removal
Spruce Weevil (*Pissodes strobi*)	Med	Impact on timber supply in the Kispiox, Kalum and North Coast Districts	Province wide	• operational adjustment factors for TS reviews • genetic resistance to weevil attack • control options
Poplar and Willow Borer (*Cryptorhynchus lapathi*)	Low	Impact on timber supply in Kalum District Restriction of Cottonwood management	Province wide	• survey methodology • control options • genetic resistance
Green Striped Forest Looper (*Melanolophia imitata*)	Med	Impact on Timber supply in Kalum District	Coastal Influence Interior	• population dynamics • hazard and risk assessment • tree mortality study

4.2 Opportunities

Forest Health opportunities by District
See Appendix 1

5.0 Fish and Fish habitat

The primary goal of the fish and fish habitat inventory program *coincides with that of the* Fisheries Branches directive to conserve and protect wild fish stocks. Accordingly, the highest priority areas for fish and fish habitat inventory will concentrate on the following:

1) areas that will be exposed to potential habitat degradation or loss as a result of forest harvesting activities;
2) increased access to known fish bearing waters as a result of resource extraction roads;
3) loss or destruction of habitat associated with resource extraction activities other than forestry;
4) areas without existing fish and fish habitat inventory required to support LRMP, first nations land claim negotiations, land use plans; and,
5) waterbodies or fish stocks of rare and endangered species that are at risk due to habitat alteration, increased access or resource use.

5.1 Objectives

Completion of:

- fish species and population inventories within discrete watershed units that identify critical habitats, life history characteristics, significant populations; and
- RIC-standard fish and fish habitat inventories at the reconnaissance level for whole watersheds or greater. This level of inventory provides sufficient information for describing fish distributions and habitat characteristics to satisfy strategic planning objectives and also supports the development of local area agreements and more detailed operational requirements (i.e. FPC stream classifications).

5.11 Strategies:

1. Intensive Fish and Fish Habitat Inventory
    - Fifth order or greater watershed areas with a high concentration of planned activity that is expected to occur within the next five years and is expected to impact known significant areas of rare and endangered or sensitive fish and fish habitats.
    - Smaller watershed units or specific reaches of watersheds with a high concentration of planned activity that is expected to occur within the next five years and is expected to impact known significant areas of rare and endangered or sensitive fish and fish habitats.
    - Intensive Fish and Fish Habitat Inventory in either of the above categories, with nested 1:20,000 scale inventories in areas without any previous resource activity, access and limited fisheries information will have the highest priority.

2. 1:20k Reconnaissance Fish and Fish Habitat Inventory
    - Fifth order or greater watershed areas with a high concentration of planned activity that is expected to occur within the next five years and is expected to impact fish and fish habitat.
    - Watershed areas less than 5th order but greater than 3rd order with a high concentration of planned activity that is expected to occur within the next five years and is expected to impact fish and fish habitat.

5.2 Opportunities

Fish and Fish Habitat Inventory opportunities by District
See Appendix 1

Projects Deemed Critical for the 2000 Fiscal Year

Are identified by the "highest' rating by MoELP in the RMP spreadsheet. Most of these projects are ongoing projects and represent a combination of lost investment, species of concern / identified priority in an LRMP, or a conservation concern where work is needed immediately.

6.0 Recreation

6.1 Objectives

Only recreation inventory projects to meet strategic planning requirements are recommended. Recreation inventory projects to meet Forest Practices Code operational planning requirements should not be proposed.

6.11 Strategies:

Completion of Recreation Inventories to support Timber Supply Analysis or Strategic Land Use Planning.

6.2 Opportunities

Recreation inventory opportunities by District)
See Appendix 1

7.0 Traditional Use Studies

TUS is funded at headquarters in Victoria through various funding mechanisms.

7.1 Objectives

A traditional use study should be completed with each First Nation within the Prince Rupert Forest Region to support strategic land use planning and to assist in the accommodation of aboriginal rights with forest management activities.

7.11 Strategies:

Fund completion of all TUS projects currently underway in Prince Rupert Forest Region.
Prioritise additional TUS funding opportunities based on the following criteria:

- extent of Crown forest land within study area
- status of proposal (has proposal been received, reviewed and recommended)
- First Nation's capacity to conduct a TUS
- potential alternative funding sources
- operational impacts if TUS not completed
- political environment
- status of treaty negotiations

7.2 Opportunities

See appendix X. TUS are not included with the rest of the RMP.

8.0 Terrain Stability Mapping

Unstable and potentially unstable areas need to be assessed and mapped. This information contributes to the determination of the operable land base, contributes to management decisions, upgrades ESA data and has links to other works including watershed restoration, water quality, fisheries, harvesting, etc. A significant amount of this work has been completed in the region to meet Forest Practices Code requirements.

8.1 Objectives

- Complete TSM at strategic level for the Prince Rupert Forest Region over the next Ten years.
- Complete high priority areas within the next 5 years.

Prince Rupert Region defines strategic level TSM as "mapping used to support higher level plans (i.e. Timber Supply Review and LRMP)". Mapping of this type should be done at the reconnaissance level - TSIL D or E or use a modelling approach. The high risk areas in the east of the region have been completed. The west portion of the region still has high risk areas to complete.

TSM level D and E are commonly referred to as reconnaissance or strategic inventories. In areas of steep terrain, however, to employ a level of this type would require a similar amount of effort as that covered under level C mapping. MATS 1995 states that "In many mountainous areas, where landslide problems are commonplace, it is quite reasonable to proceed immediately with detailed terrain and terrain stability mapping (MATS 1995). *The Prince Rupert Forest Region, therefore, recognises level C mapping in areas of the region having high risk of landslide or erosion potential as strategic level TSM.*

Other criteria required by specific levels of mapping in order to be considered strategic are:

TSIL D and E mapping:

- Areas considered to be of relatively low risk to landslide or erosion potential;
- A contiguous unit, greater than 45,000 ha in size;
- Mapping must include all areas having a potential impact on the area of interest (may include areas above an upper elevation operability line);
- Be approved by the Regional Geomorphologist as a strategic TSM inventory.

TSIL C mapping:

- A contiguous unit 15,000 ha or greater, with at least 15% of that area having a high potential for landslide or erosion potential;
- Required to support higher level planning processes;
- Be approved by the Regional Geomorphologist as a strategic TSM inventory.

Strategic level TSM, regardless of the terrain stability intensity level, must be able to be reported at the 1:20,000 map scale.

Recommended level of strategic TSM by district

District	TSIL	Comments
Bulkley	C and D	• TSIL D mapping should be the primary level of mapping. • Large portions of the district are already mapped at level C or D.
Cassiar	C and D	• Consultation with the Regional Geomorphologist is required prior to deciding what level of mapping to employ
Kalum	C	• Majority of planning unit is steep terrain.
Kispiox	C and D	• TSIL C mapping should be the primary level of mapping due to the amount of steep terrain. • Consultation with the Regional Geomorphologist is required prior to deciding what level of mapping to employ.
Lakes	D or E	• The need for strategic TSM is small
Morice	D	• Majority of the planning unit was completed at TSIL D in 1998.
North Coast	C	• Majority of planning unit is steep terrain

8.11 Strategies:

Criteria for ranking strategic TSM by District:
Strategic level TSM has only been cited in the Kispiox and Cassiar TSRs. Kispiox dealt with the TSM in in 1999. Cassiar is a high priotiy to complete because of the lack of ESAs in the forest cover data base. However for the current TSR ESA is being mdoeled using TRIM. Modelling for TSM across the TSA is needed. Models exist and require calibration. However because of the lack of cut in the Cassiar this is not likely to be funded.

8.2 Opportunities

TSM opportunities by District
See Appendix 1

9.0 Terrestrial Ecosystem Mapping

TEM provides an ecological framework for land management that integrates and displays biological and environmental conditions on a single map. These have tremendous interpretive values and are used for a broad spectrum of strategic and operational activities including wildlife, forestry, range, recreation and hydrology. TEM is based on the Biogeoclimatic Ecosystem Classification (BEC) which is also used for site index correlation, analysing yields and planning silviculture activities

The Standard for Terrestrial Ecosystem Mapping (TEM) was recently updated and approved by RIC. This standard includes three survey intensity options for mapping at 1:20k to 1:50k. The previous standard, of about 20% polygon inspections, is maintained as Level 4. Two levels of lower survey intensity are presented as Level 5 (about 10% polygon inspections) and Level R (reconnaissance sampling only). *These latter two (Level 5 and Level R) may be considered strategic.*

9.1 Objectives

Ecological mapping in support of broad-scale planning cannot be satisfied by TEM. The time and cost of acquiring TEM at this scale would not be practical. Strategic level ecosystem mapping is best obtained through alternative approaches to TEM. *Pilot PEM projects are near completion in the Prince Rupert Region. Models are a new process and therefore accurate cost estimates are difficult. However, a range of between $50,000 and $100,000 per district is considered reasonable.*

9.11 Strategies:

- Complete PEM modelling at 1:20,000 for each district in Prince Rupert Forest Region within the next ten years.

9.2 Opportunities

See Appendix 1

10.0 Vegetation Resources Inventory and Forest Cover Update

The Vegetation Resources Inventory is the replacement for the forest cover inventory, the baseline inventory for TSR and SLUPs.

10.1 Objectives

- To improve the existing Ministry of Forests standard data base and map base by providing information on timber, shrubs and other vegetation, soil moisture and nutrient regime, range and other attributes by polygon across the total landbase. The VRI will also be statistically valid by sampling unit. The sampling units are decided by the district MOF and MOELP staff and licensees in consultation with the region and Resources Inventory Branch. The unit could be a stratum, e.g. low site index lodgepole pine, or a management unit, e.g. TSA . The sampling unit for provincial reporting is the forest district.

- To maintain the currency of the existing Forest Cover database and map files used for Landscape Unit planning, TSR and operational planning on a two year cycle.

10.11 Strategies:

Strategy #1:

Complete Vegetation Resource Inventory Plans for each district in advance of any VRI activities.

- Complete inventory plans in advance of any VRI work based on the priority list for VRI ($10,000 per district - maximum of two plans per year).

Strategy #2:

Provide 1:30,000, aerial triangulated, digitally scanned aerial photography for each district in the region every 5 years and Cassiar every 10 years.

Activities to achieve this include:

- Proceed through the region based on the priority list for VRI or other inventory and operational products as determined by the Regional Strategy for VRI and FRBC Planning Units.
- Fly blocks of a 400 map sheets per year using one contractor with the ability to move the contractor from one area to another depending on weather. ($400,000 annually).

Strategy #3:

Retrofit existing forest cover inventories to phase 1 Vegetation Resource Inventories across the region within 10 years. Based on TSR concerns. Complete high priority areas in advance of TSR 3

Activities to achieve this include:

- Complete 50 full map sheet equivalents per year in the region with work proceeding as per the priority rating spreadsheet.($670,000/ annually).

Strategy #4:

Complete phase 2 Vegetation Inventories by implementation unit in sequence after phase 1 digital files are available.

Activities to achieve this include:

- $800,000 per TSA

Strategy #5:

Complete the Annual Inventory Update for depletion and TSR readiness in each district on a two year cycle.

Goals to achieve this include:

- Purchase ortho-recitified satellite imagery on a two year cycle for all active areas in the region beginning in 1997 **($50,000/region).**
- Maintain IRAS-C software and annual upgrades for each district in the region and the regional office in fiscal 1999/2000
- Ensure each district has data exchange agreements in place.
- Ensure all small business areas are GPS d before or after harvest.
- Ensure all districts move to in-house update.
- Ensure that there is **funding available** in the region annually for inventory projects related to update and TSR readiness.

10.2 Opportunities

See Appendix 1

11.0 Water and Water Quality

11.1 Objectives

Water resource inventories provide information about the stream hydrology (peak flows, low flows, and annual runoff), sediment loading, water quality (temperature, turbidity, conductivity, fecal coliform bacteria, etc.), basic stream characteristics (morphology, morphometry and stability), and support inventories of aquatic biodiversity (algae, invertebrate and fish communities).

Geographic priorities include selecting monitoring sites which are representative of a particular zone so data on a watershed with particular characteristics can be used to infer data at sites in other watersheds with similar characteristics. Areas of importance include community and domestic watersheds, high value fish streams, and watersheds requiring watershed assessments.

11.11 Strategies:

Projects were ranked using provincial criteria to meet TSR and SLUP needs.

11.2 Opportunities

See Appendix 1

12.0 Wildlife and Wildlife Habitat

12.1 Objectives

The wildlife and wildlife habitat inventories provide information about the distribution, status and abundance of wildlife as well as relevant information regarding resource management decisions and the impact these decisions have on wildlife. This information has impacts on wood availability, harvesting patterns, wildlife tree requirements, threatened or endangered species management, riparian reserves, wildlife corridors, biodiversity, etc. Failure to fill the scheduled knowledge gaps could result in the loss or damage to habitat and potentially species.

Provincial and Regional wildlife habitat inventory plans are under development in all MELP regions and in headquarters. These plans will involve consultation with licensees and will identify the geographic distribution and priority for investment opportunities by planning unit. In the normal course of events, 1:250,000 Broad Ecosystem Inventory will be completed for an entire sub-region before more detailed habitat inventories are initiated (1:50,000 in remote areas and 1:20,000 in areas where active forest development plans are underway).
Plans for wildlife species and population inventories are also under development in all MELP regions and in headquarters. These plans will involve consultation with a wide variety of resource users, other government agencies, the private sector, and First Nations and include inventories for threatened and endangered species, identified wildlife, and species of management concern.

12.11 Strategies:

Complete:

- 1:50,000 Terrestrial Ecosystem mapping (or surrogate) in areas with known high values or major conflicts (determined from 1:250,000 Broad Ecosystem mapping funded elsewhere)
- species inventories, where the species are eligible to be Identified Wildlife (at risk or regionally important and dependent on forests or grasslands), to the presence/absence or relative abundance level of intensity, but only where they are expected to be an issue for future forest development in a forest management unit;
- 1:20,000 Terrestrial Ecosystem mapping in areas with very high conflicts

12.2 Opportunities

See Appendix 1

Projects Deemed Critical for the 2000 Fiscal Year

Are identified by the "highest' rating by MoELP in the RMP sptreadsheet. Most of these projects are ongoing projects and represent a combination of lost investment, species of concern / identified priority in an LRMP, or a conservation concern where work is needed immediately.

13.0 Other Opportunities:

The following Opportunities formerly funded under ministry vote but not currently covered by any of the programs noted above which are deemed of high priority to meet the plan objectives: are included

Inventory of Inventories for Prince Rupert Forest Region: This project was funded in 1997/98. However, funding was withdrawn prior to initiating the project. The project is a gap analysis and database of all the inventories available in Prince Rupert Region by mapsheet . The database is available for all users on the Prince Rupert Region web site. Cost is projected as $50,000.

14.0 Appendices:

Appendix 1 Spreadsheet of inventory priorities (EXCEL)

Appendix 2 Ground Rules

Appendix 3 Supporting documentation (There were 190 submissions and about 100 e- mails and faxes that are not included in this RMP, but are available if FRBC wants them)

Appendix 4 Forest Management issues identified Through the AAC Determination process - Prince Rupert Forest Region, December 1996
Issues identified through the LRMP process (no author – received from the RPR IAMC co-ordinator)

15.0 References

- Resource Management Plans: Appendix III Guidelines for Strenthening Sustainable Forest Management
- North West Regional inventory Committee(NWRIC) /Strategies – NWRIC web site July 1998
- Forest Management issues identified Through the AAC Determination process - Prince Rupert Forest Region, December 1996
- Issues identified through the LRMP process (no author – received from the RPR IAMC co-ordinator)

Bulkley planning Unit Resource Mangement Plan - Strengthening Sustainable Forest Mangement (Inventory and Research) - ALL INVENTORIES

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	Comments	likley for MYA funding
B17	LRMP	Incomplete life history knowledge of giant pygmy whitefish (Red listed)	Fish Intensive lake population inventory	Bulkley TSATyhee Lake		new	15,000	15,000	0	0	0	MELP	High	High	Low	NA	No	MELP mandate no impact from timber resouce use therefore should not be FRBC eligible	
B14	LRMP	Identification of resource use	Fish Steelhead Trout River Guardian Program	Bulkley TSA Bulkley River	LRMP PU 11-5 Obj.: "continue ongoing fish management ; PU 7: focus mgt. on winter habitat for fisheries in Bulkley and Telkwa Rivers" &	new	60,000	0	0	0	0	MELP	High	High	Low	NA	No		
B7	LRMP	Improved knowledge about FN sites and trails and define areas requiring further archaeological study	AOA consolidation and validation of AOA information previously or currently being collected LRMP requires AOA to be refined form the original 1:250,000 scale	Bulkley TSA	LRMP section 2.1.10	new	40,000	40,000	40,000	40,000	0	MoF district and region	High	High	High	High-	Yes	recommended for funding through the MoF FRBC funding	
B8	(LRMP) (TSR)	lack of information on trail location and condition in order to buffer for TSR and costs to upgrade for recreational use	Recreation trail inventory for recreation access Management plan and district recreation strategy	Bulkley TSA	LRMP	new	20,000	0	0	0	0	MoF district	High	NA	High	Medium	Yes		
B4	TSR	MoFs method of determining the upper operability line and total chance planning method used by the Licensees differs by approximately 15%	G&Y site productivity study. Ground sampling to reconcile the upper operability line throughout the Bulkley TSA	Bulkely TSA _PIR chart	TSR B3	new	80,000	80,000	0	0	0	PIR	High	NA	High	Medium	Yes	(continuing problem in the TSA, study results can be used elsewhere in the TSA)	80,000
B10	LRMP	Incomplete knowledge of habitat selection by caribou, and factors limiting population growth	Wildlife -Radio telemetry of caribou and predators to determine key seasonal caribou habitats, and responses of caribou to predator movements	Bulkley TSA - Morice TSA- Telkwa Mountains	LRMP PU 11 TSR B12 Mo13	existing	80,000	75,000	60,000	0	0	MELP	Highest	Highest	High costs reduced by half for Bulkley portion	NA	Yes		22,000
B5		required information for fisheries managers to allow for the completion of Local Area Agreements	Fish - inventory database analysis. Small stream crossings will no longer need to be defaulted to 'fish-bearing' and the over engineering of these crossings can be eliminated.	Bulkely TSA _PIR chart	no TSR instructions	new	25,000	25,000	0	0	0	PIR	High		Low	low	Yes		25,000

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	Comments	likley for MFR funding
B12	LRMP	Identification of WHAs and impacts of harvesting as a result of critical Bull Trout habitat identification	Fish Bull Trout telemetry studies to identify life history patterns and critical habitats	Bulkley TSA Bulkely River WS, Babine River WS, Upper Zymoetz River	LRMP 2.1.5 PU 1,2 and 7 (all relate to fishenes values)	new	410,000	300,000	125,000	0	0	MELP	High	High	Low	NA	Yes		
B13	LRMP	Identification of conservation concern for fluvial and lacustrine Bull Trout populations	Fish Bull TroutT exploitation/creel survey	Bulkley TSA Bulkley & Babine Rivers	LRMP PU 11-5 Obj : continue ongoing fish management , PU 7 focus mgt. on winter habitat for fisheries in Bulkley and Telkwa Rivers &	new	35,000	0	0	0	0	MELP	Highest	Highest	Low	NA	Yes		
B6	LRMP	Incomplete knowledge of increased access and exploitation on resident lake populations	Fish Small Lake Inventory	Bulkley	LRMP 2.1.5 PU 1,2 and 7 (all relate to fishenes values)	new	60,000	60,000	0	0	0	MELP	Highest	Highest	Low	NA	Yes		
B11	(TSR) LRMP	reduction of environmental risk and improve land use planning decisions Increase certainty of timber supply by defining riparian buffer requirements	Fish stream inventory at 1:20,000 Annual deliverables Completed by watershed	Bulkley TSA - SCI chart	LRMP 2.1.5 no TSR instructions	existing - annual	50,000	50,000	0	0	0	SCI	High		Low	NA	Yes		50,000
B16	LRMP	Incomplete and out-of-date inventory of eagle nests	Wildlife Locate bald eagle / osprey nests on west side of Babine Lake	Bulkley TSA west side of Babine Lake	LRMP P U "Protect eagle nests within 1 km of Babine Lake"	new	5,000	0	0	0	0	MELP	High	High	Low	NA	Yes	Eagle nests are protected the licencees and SBFEP have to identify as part of their operations	
B1	(TSR)	reduction of environmental risk and improve land use planning decisions Increase certainty of timber supply by defining Environmentally sensitive areas	TSM 1:20,000 level C The project size must be at least two map sheets	Bulkely TSA _PIR chart	no TSR instructions	existing (multi-year contract)	100,000	100,000	100,000	0	0	PIR	High	NA	low	low	Yes	(Operational need for licensee Areas of high risk in Bulkley already complete)	100,000
B2	(TSR)	reduction of environmental risk and improve land use planning decisions Increase certainty of timber supply by defining riparian buffer requirements	Fish habitat 1:20,000 PIR would like to see the funding to this inventory increased	Bulkely TSA _PIR chart	no TSR instructions	existing (multi-year contract)	50,000	50,000	50,000	0	0	PIR	Highest		low	NA	Yes	(operational need for licensee)	50,000

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	Comments	Ikley for MYA funding
B9	LRMP	Incomplete knowledge of mountain goat critical habitats (kidding, winter, licks, movement corridors)	Wildlife - GPS radio telemetry of goats to determine key habitats and movements	Bulkley TSA - Bait Range, Blunt Mt, Telkwa R. drainage	LRMP PU 11 TSR B12	new	75,000	30,000	30,000	0	0	MELP	High	High	Low (Bait),Medium (Blunt),High (Telkwa) Costs reduced by one third	NA	Yes		
B3	TSR (LRMP)	lack of knowledge on how silviculture priorities and the affects that landscape unit plans, wildlife values and inventories may have on future fibre flow. This activity is consistent with FRBC's Provincial initiative to determine how it will achieve its	G&Y landscape unit modelling **Spatial modelling using ATLAS. Pilot project that can apply to whole TSA.**	Bulkely TSA _PIR chart	TSR B2	existing	80,000	0	0	0	0	PIR	High	NA	Medium	Medium	Yes	(can be used against whole TSA)	80,000
B15	LRMP	Incomplete knowledge of grizzly bear critical habitats (e.g. denning) and movement patterns	Wildlife GPS radio telemetry of grizzly bears to determine critical habitats and movements, site investigations on site series basis	Bulkley TSA Nilkitkwa, Babine drainages (also upper Copper)	LRMP PU 1,2, and 11	new	225,000	200,000	200,000	0	0	MELP	High	High	Medium, but costs are high	NA	Yes		
					Total $		1,410,000	1,025,000	605,000	40,000	0								$407,000

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5 yrs					Proponent Name	Priority					Comments
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent	MELP	MoF District	MoF Region	Joint Rank	
Ki1	n/a	Strategic watershed level fish distribution. Reduced environmental risk from logging	Fish 1:20,000 Reconnaissance Fish & Fish Habitat Inventory. Annual projects completed by watershed	Kispiox TSA -SCI chart	none	existing	125,000	125,000	125,000	125,000	0	SCI	High	High	Medium - Low	Low	1	Planning table (SCI, MELP, MoF), recommends continued funding for this project that is already significantly completed. SCI and MELP priority to complete Shelagyote watershed. Consider extending project to other watersheds in future, if funding available.
Ki2	LRMP and TSR	Identification of WHAs and impacts of harvesting on nesting, by Northern Goshawks	Wildlife Northern Goshawk nest inventory with quantification of post-fledging areas and effects of harvesting	Kispiox FD - covers off goshawk inventories for all licensees in the district	LRMP (6.13) & TSR Kx8	existing	190,000	35,000	25,000	0	0	SCI/MELP	High	High	Medium	n/a	1	Planning table (SCI, MELP, MoF), recommends continued funding for this project that is now in its last critical year of analysis and publication. Goal is to enter monitoring phase in 2001/02, relative to harvesting activities, at significantly lower funding level. (note: 00/01 funding level could be reduced, if other 1st priority projects are at risk)
Ki3	LRMP and TSR	Monitoring of the implementation of the Kispiox LRMP. Field verification and refinement of models for grizzly bear, goat, deer moose, marten and fisher	Wildlife and wildlife habitat models	Kispiox FD	LRMP (6.13) & TSR Kx8	new	50,000	0	0	0	0	MoF district (will be a joint MoF, SCI, MELP project)	High	High	High	n/a	1	Planning table (SCI, MELP, MoF), recommends funding for this new project. It is a high priority for all parties, is driven by the LRMP and the product will be incorporated in future TSR processes, to help address the need for a district wildlife strategy.
Ki4	LRMP	Treatment unit mapping for grizzly habitat in the Babine River watershed	Wildlife habitat mapping through GIS and field verification in the Babine LRUP area.	Kispiox FD - Babine River watershed	LRMP (7.2) and TSR Kx8	new	15,000	85,000	85,000	0	0	SCI/MoF district (MELP will also be a partner)	High	High	High	n/a	1	Planning table (SCI, MELP, MoF), recommends funding for this new project. It is a high priority for all parties, and is also driven by the LRMP (LRUP linkage) and will benefit the district wildlife strategy for TSR purposes. Base info for this project will come from the Wildlife and Wildlife Habitat Models project (above). (note: 00/01 funding is a low estimate)
							360,000											
Ki 5	n/a	Terrain stability data for the district	TSM 1:20,000	Kispiox - SCI charts and unallocated area	n/a	existing	110,000	0	0	0	0	SCI	High	n/a	Low	Low	2	No strategic planning linkage. Project not viable at lower funding levels, and no negative impacts if funding is suspended for one year.
Ki6	LRMP and SOE	Monitoring of the Kispiox LRMP	Water Index of Biologic Integrity conditions. Protection of hydrologic integrity of watersheds and to protect sensitive fish habitat. Develop indicators for water quality.	Kispiox FD	LRMP (6.2, 6.3)	new	20,000	0	0	0	0	MoF	High		High		3	Important LRMP implementation item that is a priority for funding, if money is available.
Ki7	LRMP and SOE	Monitoring of the Kispiox LRMP	Water - Erosion potential and sediment source inventory - artificial point source evaluation	Kispiox FD	LRMP (6.2, 6.3)	new	10,000	0	0	0	0	MoF district	High		High	High	3	Important LRMP implementation item that is a priority for funding, if money is available.
Ki8	LRMP and TSR	Lack of information on the best sites for pine mushrooms.	PEM Predictive Ecosystem Mapping and field checking to identify the probability of finding highest value pine mushroom sites in the ICH/CWH. Photo interpretation using Softcopy for selected areas and ground truthing.	Kispiox, Kalum and Cassiar -ICH and CWH	LRMP (6.16) & TSR Kx9	new	30,000	30,000	20,000	0	0	MoF region	High	NA	High	High	3	Clear links to TSR and LRMP.
Ki9	LRMP and TSR	Lack of inventory of critical habitats for mountain goats	Wildlife Monitor Mountain Goat habitat use and movements with GPS telemetry and Habitat mapping.	Kispiox FD	LRMP (6.13) & TSR Kx8and Kx10	new	175,000	100,000	0	0	0	MELP	High	High	Medium	n/a	4	Planning table recognized LRMP priority for species, however, funding levels cannot support more than one major habitat inventory of this scale. Price could be reduced using aerial surveys vs GPS radio collars.
Ki10	LRMP and TSR	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification.	Fish Bull Trout telemetry studies to identify life history patterns and critical habitats.	Kispiox TSA - Babine river watershed	LRMP 6.3, 6.13 & TSR Kx8 -	New	130,000	100,000	25,000	0	0	MELP	High	High	Low	n/a	4	Unsure of relative priority of bull trout studies - this one appeared to be representative, without having direct input from MELP Fisheries staff.
							475,000											

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5 yrs					Proponent Name	Priority					Comments
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent	MELP	MoF District	MoF Region	Joint Rank	
Ki11	LRMP and TSR	Lack of inventory of rare ecosystems	Wildlife Mapping with ground truthing to locate, identify and describe rare ecosystems and environmentally sensitive areas	Kispiox FD	LRMP (6.1) & TSR Kx8	new	35,000	20,000	0	0	0	MELP	High	High	Low	n/a		Similar project to one started on Queen Charlottes last year. Clear links to LRMP.
Ki12	LRMP	Monitoring of the Kispiox LRMP.	Locate the Telegraph Trail, in order to establish it under the Heritage Act. Actual location is not known. Buffers around the trail are needed to protect it	Kispiox FD	LRMP (6.9)	new	20,000	0	0	0	0	MoF district	High	n/a	High	High		Easy project to complete in one year, if funds available. Provides important strategic level information to incorporate in operational plans.
Ki13	TSR	Lack of information on regenerated stand volumes	G&Y Represented vs. potential site index study	Kispiox FD	TSR Kx5	new	0	100,000	0	0	0	MoF region	High	n/a	High	High		**Very high MoF priority for 2001/02**
Ki14	TSR	Lack of information on regenerated stand volumes	G&Y SIBEC sampling	Kispiox FD	TSR Kx5	new	0	80,000	0	0	0	MoF region and district	High	n/a	High	High		**Very high MoF priority for 2001/02**
Ki15	(TSR) (LRMP) (SOE)	Lack of current imagery in order to build any inventory product, update inventories or provide operational staff with imagery	TRIM 2 Imagery acquisition at 1:30,000	Kispiox FD	nothing specific	new	100,000	0	0	0	0	MoF region and district	High	n/a	High	High		Planning table recommends that regional staff initiate coordinated licencee/govt business case for this project. Clear benefit to all proponents, but cannot be pursued district by district.
Ki16	LRMP and TSR	Habitat supply decision tools (GIS) for biodiversity implementation	Wildlife Workshop and training to identify and make operational the best GIS software for habitat supply analysis	Kispiox FD and MoF Region	LRMP6.1 & TSR Kx8 and Kx.10	new	50,000	35,000	0	0	0	MELP	High	High		n/a		Will bring this project forward on regional MoF/MELP priority list. Broad regional benefits to initiating work on this project.
Ki17	LRMP and TSR	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Bull Trout telemetry studies to identify life history patterns and critical habitats	Kispiox TSA - Kispiox River watershed	LRMP 6.3, 6.13 & TSR Kx8 -	New	150,000	100,000	25,000	0	0	MELP	Highest	Highest	low	n/a		
Ki18	LRMP	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Bull Trout exploitation/creel survey	Kispiox TSA - Kispiox River	LRMP 6.3,	new	35,000	0	0	0	0	MELP	High	High	low	n/a		
Ki19	LRMP	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Life History Inventories & population status of ST in district Classified Waters	Kispiox TSA - Kispiox, Kitsegucla and Babine River	LRMP 6.3	new	10,000	10,000	10,000	0	0	MELP	Highest	Highest	low	n/a		
Ki20	LRMP and TSR	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Bull Trout telemetry studies to identify life history patterns and critical habitats	Kispiox TSA - Skeena watershed and tributaries	LRMP 6.3, 6.13 & TSR Kx8 -	New	130,000	100,000	25,000	0	0	MELP	High	High	low	n/a		
Ki21	LRMP and TSR	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Bull trout history studies to identify population status and critical habitats	Kispiox TSA -Cranberry, Kispiox and Babine River	LRMP 6.3, 6.13 & TSR Kx8	new	2,500	2,500	0	0	0	MELP	High	High	low	n/a		
							532,500											
					Total $		**1,387,500**	**797,500**	**215,000**	**0**	**0**							

							$ required over 5years						Priority							
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	DIC priority	Comments	Likely for MYA funding
Ka21	(LRMP) (TSR) SOE operations	Imagery acquisition to update TRIM base, forest cover to VRI and all inventories using Softcopy technology	TRIM 2 1 30,000 imagery	Kalum TSA and TFL 1	No TSR instruction	New	250,000	0	0	0	0	SCI	Medium - High		Highest	Highest	Yes	High		
Ka36	TSR	second growth stands in the Kitimat valley are now maturing and the old inventory does not reflect the new stands adequately	VRI Vegetation Resources inventory	Kalum TSA	TSR Ka-1	existing	40,000	0	0	0	0	MoF distrct and region	Highest		Highest	Highest	Yes	High		40,000
Ka9	TSR (LRMP)	uncertainty around biodiversity managementespecially for botanical forest products	PEM predictive Ecosystem Mapping	Kalum - Nass TSA, TFL 1, TFL 41	TSR N-16, MWP 41-3	New	200,000	0	0	0	0	MoF region/SCI/ West Fraser	High		Low	High	Yes	High		100,000
Ka25	(TSR)	TSM exists in small pieces that have been completed over the past 4 years. To provide a full coverage for the TFL they need to be edge tied	TSM 1:20,000 Level C edge tie mapsheets completed over last 4 years	Kalum - TFL 1	No TSR instructions	existing	50,000	0	0	0	0	SCI	High	NA	Low	High	Yes	High		50,000
Ka26	(TSR)	2nd growth productivity study under estimation of second growth heights (audit results)	VRI Vegetation Resources inventory ground sampling on 2nd Growth stands to calibrate yield curves for 2nd growth	Kalum - TFL 1	No TSR instructions	existing	100,000	100,000	0	0	0	SCI	High	NA	Low	High	Yes	High	High to complete the study only	100,000
Ka29	(TSR)	npanan net downs	Fish and Fish habitat, 1:20,000	Kalum TFL 41 various drainages to complete 14 watersheds	no TSR instructions	existing	150,000	150,000	0	0	0	West Fraser	High		Medium	NA	Yes	High	to complete TFL coverage	150,000
Ka18	(TSR)	npanan net downs	Fish and Fish habitat, 1:20,000	Kalum Nass TSA -Kinskuch watershed	no TSR instructions	New	70,000	70,000	0	0	0	West Fraser	High			NA	Yes	High	**contentious watershed**	70,000
Ka33	(TSR)	to replace old ESAs for soils	TSM 1:20,000 level C To complete coverage of TFL 41 - 36,950ha	Kalum TFL41 various drainages	no TSR instructions	existing	120,000	120,000	0	0	0	West Fraser	High			Low	Yes	High	To finish TFL coverage	120,000
Ka16	(TSR)	Phases IV - VI of Skeena West Exstew/Zymacord and E Kalum	Fish and Fish Habitat at 1,20,000	Kalum - Nass TSA - FLA16835, Includes SBFEP and Bell Pole charts	No TSR instructions	existing	250,000	0	0	0	0	SCI	High		Low	NA	Yes	High to finish	This was rated as high as long as it is finished next year	250,000
Ka14	(TSR)	finish Kwinagese drainage started in 1999/2000	Fish and Fish Habitat	Kalum Nass TSA- FLA16883 Orenda	No TSR instructions	existing	65,000	0	0	0	0	SCI	High		Med	NA	Yes	High to finish	This was rated as high as long as it is finished next year	65,000
Ka12	TSR	uncertainty around the individual polygon data in the inventory for assessing harvest feasibility , green up, adjacency and as the baseline inventory for most other inventoires	VRI Vegetation Resources Inventory Phase 1 photo acquisiton and retrofit	Kalum - Nass TSA	TSR N5, N6, N7, N8, N9 (and can be sued in inputs for N13, N14, N16)	New	300,000	350,000	350,000	350,000	0	MoF distrct and region	Highest		Highest	Highest	Yes		Costs have been tightend A large cost that needs a presentation to pronze	
Ka1	TSR	unrecoverable losses upgrade	Forest health - decay waste and breakage factors study	Kalum and Nass TSA	TSR Ka-10, N-18	New	0	100,000	0	0	0	MoF	Medium	NA	Low	Medium	Yes	Low		

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5years					Proponent Name	Priority					DIC priority	Comments	Likely for MYA funding
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent priority	MELP	MoF District	MoF Region	FRBC eligible			
Ka5	(LRMP) SOE	lack of information on the return interval of destructive debris flows and the storm conditions that trigger these events.	TSM - Debris flow occurrence and major Storm cycles To provide dendrochronological dates of debris flow occurrence, to update and complete all known historical storms , flood and landslide data, to link dendrochronological debris flow dates to most probable	Kalum FD	No TSR instructions	new	65,000	20,000	0	0	0	MoF region	High	NA	Low	High	Yes	Low		
Ka6	TSR and (LRMP)	Incomplete information on fish distributions, habitat use & critical habitats	Fish Life History Inventories & population status of Steelhead Trout/CT in district Classified Waters	Kalum - Nass and Kalum TSAs Nass and lower Skeena tributaries	No TSR instructions	New	60,000	60,000	60,000	0	0	MELP	Highest	Highest	Low	NA	Yes	Low		
Ka13	Treaty	Incomplete information of Steelhead Trout run-timing, distribution and abundance's	Fish - Intensive evaluation of fish-wheel as population assessment technique	Kalum - Nass TSA	No TSR rationale	existing	60,000	0	0	0	0	MELP (CLIB)	High	High	Low	NA	No	Low	Should be funded by CLIB	
Ka38	(LRMP)	archaeological overview assessment's of underwater and coastal sites	AOA	Kalum TSA	LRMP in progress	New	10,000	10,000	10,000	10,000	10,000	LRMP table	High	NA	Low	Low	Yes	Low		
Ka39	(LRMP)	understanding of cultural heritage for Gitxsan	TUS Traditional Use Study	Kalum TSA	LRMP in progress	existing	200,000	0	0	0	0	Gitxsan	Highest	NA	Low	Highest	Yes	Low	TUS underway Funded by MoF headquarters	
Ka2	(TSR)	Recreation Features update to standard	Recreation	Kalum /Nass TSAs	No TSR instructions	New	10,000	10,000	0	0	0	MoF distrct	rmedium	NA	Medium	Medium	Yes	Low		
Ka4	TSR	Incomplete information on distribution and key habitats for bat species	Wildlife - Inventory specific habitats (primarily wetland complexes) for bats, in particular the red listed Northern Long-eared myotis	Kalum and Nass TSA, TFL 1, TFL41	TSR N-14 an N-16	New	40,000	40,000	0	0	0	MELP	High	High	Medium	NA	Yes	Low	not an identified wildlife species for area	
Ka15	TSR	lack of information on critical habitats for Grizzly bear	Wildlife - Habitat capability and suitability mapping for grizzly bear	Kalum Nass TSA- Upper Bell Irving and Nass tributaries, TFL1, TFL41	TSR N-14 an N-16	New	70,000	80,000	0	0	0	MELP	High	Medium	Medium	NA	Yes	Low		
Ka32	(TSR)	lack of data on 2nd growth stands	G&Y Growth and yield study lack of data on declining harvest rates	Kalum TFL41	MWP 41-3	New	0	70,000	0	0	0	West Fraser	High-	NA	Medium	High	Yes	Low	wait for results from the TFL1 study	
Ka27	(LRMP)	grizzly bear, Kermode and tailed frog information gaps	Wildlife habitat mapping	Kalum - TFL 1	LRMP in progress	New	0	150,000	0	0	0	SCI	Medium - High	High	Medium - low	NA	Yes	Low		
Ka7	TSR	unrecoverable losses Annual identification of pest risk	Forest health - Bark beetle hazards and risk	Kalum - Nass TSA	TSR N-18	New	0	40,000	400,000	40,000	40,000	MoF Region	High	NA	Medium to High	High	Yes	Low	Costs are high Tighten up dollars	
Ka3	TSR (LRMP)	update visual landscape inventory along major corridors and initiate on new corridors	Recreation - Visual Landscape Inventory for Highway 16, Highway 37 and Hwy 37a	Kalum and Nass TSA	LRMP in progress, TSR Ka 8	New	50,000	0	0	0	0	MoF distrct	High	NA	High	Medium	Yes	Medium	could be done with distrct and regional staff	
Ka37	TSR	uncertainty around operability	G&Y operability studies	Kalum TSA	TSR Ka 9	New	0	0	20,000	0	0	MoF distrct	High	NA	High	Medium	Yes	Medium		
Ka45	(TSR)	Recreation trails	Recreation - Mapping and GPS locations of trails	Kalum/Nass TSAs	No TSR instructions	New	20,000	0	0	0	0	MoF distrct	High	NA	High	Low	Yes	Medium		
Ka8	TSR	unrecoverable losses, identification of pest risk	Forest health - Rust impact Nass TSA	Kalum - Nass TSA	TSR N18	New	25,000	0	0	0	0	MoF	High	NA	Low	High	Yes	Medium		

							$ required over 5years						Priority							
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	DIC priority	Comments	Likely for MYA funding
Ka17	(TSR)	very little fish inventory information in the forest licence	Fish and Fish Habitat 1:20,000	Kalum Nass TSA - FLA16884 Buffalo Head	No TSR instructions	New	0	100,000	0	0	0	SCI	High		Low	NA	Yes	Medium		
Ka24	TSR and (LRMP)	Incomplete information on fish distributions, habitat use & critical habitats	Fish Intensive Inventory of Rare and endangered Bull Trout species and habitat	Kalum Nass TSA/Kalum TSA Nass and Skeena tributaries	No TSR instructions	new	0	0	60,000	60,000	60,000	MELP	Highest	High	Low	NA	Yes	Medium	focus down on Bull Trout after analysing 1:20,000 information	
Ka28	(TSR)	upgrade to new standards	Recreation and landscape inventory upgrade to new standards	Kalum - TFL 41	no TSR instructions	New	0	50,000	0	0	0	West Fraser	Medium	NA	Low	Medium	Yes	Medium		
Ka42	(TSR)	unrecoverable losses	Forest health - mistletoe impact studies	Kalum/Nass TSA	No TSR instructions	New	0	40,000	0	0	0	MoF region	Medium	NA	Low	Medium	Yes	Medium		
Ka43	(TSR)	unrecoverable losses	Forest health - locally important pests	Kalum/Nass TSA	No TSR instructions	New	0	50,000	0	0	0	MoF region	Medium	NA	Low	Medium	Yes	Medium		
Ka31	TSR	uncertainty around IRM values for TSR net downs	Wildlife habitat mapping grizzly bear and mountain goat	Kalum TFL41	MWP 41-3	New	0	100,000	100,000	100,000	100,000	West Fraser	High-Med		Medium	High	Yes	Medium	Wait for the results of PEM before proceeding	
Ka35	(TSR)	uncertainty around archaeological sites for operational planning	AOA Archaeological Overview Assessment	Kalum TSA	No TSR instructions	New	20,000	0	0	0	0	MoF region	High	NA	Medium	High	Yes	Medium		
Ka41	LRMP and SOE	long term study (47 years) determining seventy of run off events for analysis of potential impacts due to forest land use	Water - Zymetz Long term water quantity and quality station requires $20,000 annually. Completed by Water Survey of Canada	Kalum TSA/Bulkley TSA	LRMP "maintain aquatic values"	existing	20,000	20,000	20,000	20,000	20,000	MoF region	High		Medium	High	Yes	Medium		
Ka44	(TSR)	Inventory audits and other studies show that the actual site height in the inventory file is underestimating site index This affects many timber supply issues	G&Y - site productivity study on represented versus potential site index	Kalum/Nass TSA	No TSR instructions	New	0	115,000	0	0	0	MoF region	Medium	NA	Medium	Medium	Yes	Medium		
Ka46	TSR	Incomplete information on location of Northern goshawk nests	Wildlife - Inventory specific landscapes for northern goshawks to identify nest sites	Kalum/Nass TSAs - lower elevation old-growth forests	TSR N-14 an N-16	New	80,000	80,000	80,000	0	0	MELP	High	High	Medium	NA	Yes	Medium		
Ka22	(TSR)	npanan net downs	Fish and Fish habitat, 1:20,000	Kalum Nass TSA Paw Creek watershed	no TSR instructions	New	80,000	81,000	0	0	0	West Fraser	High			NA	Yes	Medium		
Ka23	(TSR)	npanan net downs	Fish and Fish habitat, 1:20,000	Kalum Nass TSA white river watershed (south side)	no TSR instructions	New	40,000	45,000	0	0	0	West Fraser	High -Med			NA	Yes	Medium		
Ka10	(TSR) (SOE)	provide certainty to moose harvest allocations between FN and resident hunters Need identified by FN negotiating table phase out in 2000	Wildlife - documenting movements and habitat use by moose **(COSTS VARY BETWEEN MELP AND NISGA'A ESTIMATES)**	Kalum -Nass TSA	no rationale - project near completion for maximum data return	existing	40,000	0	0	0	0	Nisga'a	Highest	Low	Low	NA	Yes	Medium to finish		40,000

							$ required over 5years						Priority							
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	DIC priority	Comments	Likely for MYA funding
Ka11	(TSR) (SOE)	phase out in 2000	Wildlife - documenting movements and habitat use by grizzly bears in Nass drainage	Kalum Nass TSA	no rationale - project has not produced sufficient data to warrant continuation	existing	40,000	0	0	0	0	Nisga'a	High	Low	Low	NA	Yes	Medium to finish		40,000
					Total $		2,525,000	2,051,000	1,100,000	580,000	230,000									1,025,000

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5years					Proponent Name	Priority				FRBC eligible	Comments	Likely MYA funding
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent	MELP	MoF District	MoF Region			
L2	(TSR) LRMP	Incomplete knowledge of increased access and exploitation on resident lake populations	Fish Small Lake Inventory	Lakes TSA	LRMP 17, 20, 51	new	60,000	60,000	0	0	0	MELP	Highest	Highest		NA	yes		
L3	LRMP and TSR	Insufficient information on key habitats for red and blue-listed species	Wildlife Inventory of northern goshawk nest sites, post fledging areas and responses to harvesting	Lakes TSA	LRMP 45.2 TSR La12"	existing	120,000	120,000	150,000	0	0	Babine/ MELP	Highest	Highest		NA	yes		$70,000
L4	LRMP and TSR	Incomplete documentation of moose winter ranges and movement comdors	Wildlife Radio telemetry of moose to identify winter range and movement comdors within and between ranges	Lakes TSA	LRMP 50.x & TSR La14	existing	60,000	60,000	0	0	0	MELP/ FLSM/ MoF	Highest	Highest		NA	yes	see L22 for funding	
L5	LRMP and TSR	Habitat supply decision tools (GIS) for biodiversity implementation	Workshop and training to identify and make operational the best GIS software for habitat supply analysis	Lakes TSA	Lakes LRMP 42.1 and TSR La12	new	50,000	35,000	0	0	0	MELP	High	High		NA	?	MoF regional comment can this tie in with PEM?	
L6	LRMP	Insufficient information on key habitats for red and blue-listed species	Wildlife Distribution of American Bittern nesting areas	Lakes TSA	LRMP 45.2	new	50,000	50,000	500,000	0	0	MELP	High	High		NA	yes		
L7	LRMP	Insufficient information on key habitats for red and blue-listed species and habitats	Wildlife Distribution of rare plant communities not well understood. only partially inventoned	Lakes TSA	Lakes LRMP 45.2	new	50,000	50,000	0	0	0	MELP	High	High		NA	yes		
L8	LRMP	identification of riparian reserves. Providing data for Local area agreements	Fish and Fish habitat at 1:20,000 completed watersheds annually	Lakes TSA	TSR La12 , LRMP 17 Mgt. of Fish pops for long term benefits	existing	100,000	0	0	0	0	Babine	High			NA	yes		$100,000
L9	TSR	monitoring of harvest levels form different stand types to ensures that the timber "profile" is being cut.	G&Y Study Volume Class Profile	Lakes TSA	TSR La 11	existing	10,000	0	0	0	0	MoF district	High	NA	High	High	yes		$10,000
L10	(LRMP) (TSR)	Improved knowledge about FN sites and trails and define areas requiring further archaeological study	AOA LARP higher level plan include all FN data Update and GPS locate FN trail and site locations	Lakes TSA	no TSR instructions	existing	15,000	0	0	0	0	MoF district	High	NA	High	High	yes		$15,000
L11	EFMPP (TSR) (LRMP)	improved inventory base information for timber , wildlife and biodiversity management	Vegetation Resources Inventory Phase 1 and phase 2	Lakes TSA - Babine Chart	EFMPP inputs to all LRMP objectives	existing	410,000	250,000	0	0	0	Babine	High			High	yes	to complete	$161,274
L12	EFMPP (TSR) (LRMP)	improved inventory base information for timber, wildlife and biodiversity management	PEM/TEM comparative analysis comparing the results of full blown Terrestrial Ecosystem Mapping with two predictive models	Lakes TSA - Babine Chart	EFMPP inputs to all LRMP objectives	existing	0	540,000	0	0	0	Babine	High			Low	yes	delayed and moved to implement under the IFPA in 2001/2002	
L13	EFMPP (TSR)	improved site productivity information for timber yield modelling	G&Y SIBEC and Permanent Sample Plots	Lakes TSA - Babine Chart	EFMPP and TSR	existing	333,665	443,750	443,750	443,750	0	Babine	High			High	yes	Regional comment 'High' for $333,665 'Low' beyond that	$333,665

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely MYA funding
L14	LRMP TSR	Unclear link between forest harvesting patterns and natural disturbance regimes and deciduous forest habitat supply	Wildlife Inventory of past, present and future expected distribution of deciduous forest stands (especially riparian) for habitat supply of beavers and associated organisms / research on regeneration rates and limiting factors	Lakes TSA - SBSdk and eastern SBSmc2	LRMP 43.6 " & 51.4 TSR La9	new	50,000	70,000	50,000	0	0	MELP	High	High		Na	yes		
L15	LRMP	identification of riparian reserves Providing data for Local area agreements	Fish and Fish habitat at 1,20,000 completed watersheds annually	Lakes TSA -FLSM charts	TSR La12 ; LRMP 17 Mgt of Fish pops for long-term benefits	existing	70,000	0	0	0	0	FLSM	High			NA	yes		$70,000
L16	TSR, Char Mgmt Committee	Uncertain distribution & exploitation of critical habitats for species of concern	Fish Large Lake - Char Inventory	Lakes TSA Babine, Nechako Reservoir, Francois Cheslatta Lakes	TSR La9 ; LRMP 17 Mgt of Fish pops for long-term benefits	new	100,000	100,000	100,000	0	0	MELP	Highest	Highest		NA	?		
L17	LRMP	incompatibility of baseline inventories in parts of the Lakes TSA due to 1/3 of the TSA being re-inventoried to VRI standards	VRI Vegetation Resources inventory Phase 1 retrofit of Forest cover using existing 1 40,000 imagery and Softcopy technology including site series (TEM) by polygon	Lakes TSA balance outside Babine chart	LRMP 'classify lakeshore, wetland, riparian"	New	400,000	150,000	0	0	0	MoF region	High		High	High	yes		$200,000
L18	LRMP	Identification of WHAs and impacts on harvesting (TSR) as a result of critical Bull Trout habitat identification	Fish Bull Trout life history studies to identify population status and critical habitats	Lakes TSA Cheslatta Rivers	TSR La9 ; LRMP 17, 20, 45, 51	new	25,000	25,000	0	0	0	MELP	High	High		NA	yes		
L19	LRMP	Insufficient information on key habitats for red and blue-listed species	Wildlife Distribution and roosting sites of rare bats notably Northern Long-eared Myotis and other species with uncertain distributions at present	Lakes TSA focusing on riparian and low-elevation cliffy terrain	LRMP 45.2	new	50,000	50,000	0	0	0	MELP	High	High		NA	yes		
L20	LRMP	Insufficient information on key habitats for red and blue-listed species and for wide-ranging carnivores	Upgrading of grizzly bear habitat suitability and capability maps, so as to direct grizzly bear management planning	Lakes TSA Known areas of grizzly bear distribution (e.g., Klaytahnkut-Fleming)	LRMP 43.x 45.2	new	70,000	20,000	0	0	0	MELP	High	High		NA	yes		
L21	TSR LRMP	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Fish and Fish Habitat Inventory 1 20,000 Reconnaissance	Lakes TSA operational areas	TSR La9 ; LRMP 17 Mgt of Fish pops for long-term benefits	new	200,000	100,000	75,000	0	0	MELP	High	High		NA	yes		

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5years					Proponent Name	Priority				FRBC eligible	Comments	Likely MYA funding
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent	MELP	MoF District	MoF Region			
L22	LRMP	Complete identification of caribou winter ranges and migratory corridors for harvest planning	Wildlife Radio telemetry of caribou to identify habitat selection on winter range / movements (nearly completed)	Lakes TSA Tweedsmuir caribou herd in southern Lakes FD	LRMP 49 x " "	existing	60,000	0	0	0	0	MELP/ FLSM/ MoF	Highest	Highest		NA	yes		$60,000
					Total $		2,283,665	2,123,750	1,318,750	443,750	0								$1,019,939

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	likely for MYA funding
M13	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Wildlife Monitoring use of movement corridors and critical habitats (licks) by Mountain Goats. $25,000 form Northwood. $22,000 HFP	Monce TSA Nadina Mountain block, with possible expansion	TSR Mo13	existing	70,000	70,000	0	0	0	MELP/ Northwood	Highest/ High	Highest		NA	Yes		$47,000
M14	TSR (LRMP) (IFPA)	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC. Management strategies in riparian	Fish and fish habitat reconnaissance at 1:20,000	Monce TSA Northwood chart	TSR Mo13	existing	300,000	0	0	0	0	Northwood	High	High		NA	Yes		$300,000
M20 and B10	LRMP	Incomplete knowledge of habitat selection by canbou, and factors limiting population growth	Wildlife -Radio telemetry of canbou and predators to determine key seasonal canbou habitats, and responses of canbou to predator movements. (Costs include portion in Morice) $25,000 from Northwood	Bulkley TSA - Monce TSA- Telkwa Mountains	LRMP PU 11 TSR B12 Mo13	existing	80,000	75,000	60,000	0	0	MELP	Highest	Highest	High	NA	Yes	costs reduced by half for Monce portion	$25,000
M5	TSR SOE	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC. management strategies in riparian	Fish and fish habitat reconnaissance at 1:20,000	Monce TSA -West Fraser chart	TSR Mo13	existing	300,000	300,000	0	0	0	HFP	High	High		NA	Yes		300,000
M9	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Wildlife inventory for Northern Goshawk nests, especially in eastern sections of the FD	Monce TSA Eastern Monce FD	TSR Mo13	existing (in Lakes FD)	70,000	70,000	70,000	0	0	HFP	High	High		NA	Yes		$70,000
M2	(LRMP) (IFPA) (TSR)	updating current AOA with missing information in time for future LRMP	AOA upgrade	Monce TSA	support for future LRMP and TSR3	new	6,000	0	0	0	0	MoF distnct	High		High	High	Yes		
M3	(TSR3) (LRMP) (IFPA) (SOE)	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC. Basis for wildlife management strategies. Can be used for better estimates of site productivity using SIBEC sampling	PEM	Monce TSA	TSR Mo13	new	120,000	0	0	0	0	Northwood/MoF region/ , MoF distnct	High		Highest	Highest	Yes	Not sure if this where licensees are willing to put the MYA dollars	$56,000
M4	(TSR)	Ecological basis for site productivity estimates	G&Y SIBEC sampling	Monce TSA	no TSR instructions	new	0	35,000	0	0	0	MoF region	Medium	NA		Medium	Yes		
M7	TSR	Identification of conservation concern for fluvial and lacustrine BT populations	Fish Bull Trout exploitation/creel survey	Monce TSA Bulkley & Morice Rivers	TSR Mo13	new	35,000	0	0	0	0	MELP	Highest	Highest		NA	Yes		

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	likely for MYA funding
M10	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Wildlife Inventory location and viability of American Bittern nest areas	Morice TSA focus on lakes in the SBSdk and eastern mc2	TSR Mo13	new	50,000	50,000	50,000	0	0	MELP	High	High		NA	Yes		
M11	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Wildlife Inventory using snow-tracks for fisher in habitats with highest likelihood of sustaining a population	Morice TSA focus on riparian systems with large cottonwood retention, especially in SBSdk	TSR Mo13	new	70,000	70,000	0	0	0	MELP	High	High		NA	Yes		
M12	TSR (LRMP)	Identification of WHAs and impacts on harvesting (TSR) as a result of critical BT habitat identification	Fish Bull trout life history studies to identify population status and critical habitats	Morice TSA Morice and Bulkley Rivers	TSR Mo13	new	2,500	2,500	0	0	0	MELP	High	High		NA	Yes		
M16	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Bull Trout telemetry studies to identify life history patterns and critical habitats	Morice TSA upper Bulkley River & Morice River WS	TSR Mo 13	new	145,000	145,000	50,000	0	0	MELP	High	High		NA	Yes		
M17	TSR	Incomplete knowledge of distribution and critical habitats for Identified Wildlife species under FPC	Wildlife Expand Grizzly Bear habitat capability and suitability mapping using models from Gosnell, and Predictive Ecosystem Map base	Morice TSA Western TSA, especially Thautil, upper Gosnell, upper Morice and Nanika	TSR Mo13	new	0	40,000	80,000	20,000	0	MELP	High	High	Medium	NA	Yes	wait until after the PEM model is finished	
M18	(LRMP) (IFPA) (TSR)	lack of current imagery in order to build any inventory product, update inventories or provide operational staff with imagery	TRIM2 imagery at 1 30,000 digital file in preparation for use with Softcopy	Morice TSA whole TSA	support for future LRM and TSR3	new	200,000	0	0	0	0	MoF district	Highest		Highest	Highest	Yes	All agencies and licencees benefit	
M19	(LRMP) (IFPA) (TSR)	33 map sheets in the Morice are 26 years out of date and were never re-inventoried in 1991. This inventory is now being cut into small pieces and analysed in a way that it was never intended for;	VRI phase 1 retrofit of old inventory to VRI standards	Morice TSA whole TSA	support for future LRMP and TSR3	new	0	500,000	200,000	100,000	0	MoF district	High		High	High	Yes		
M1	(TSR)	Incomplete knowledge of increased access and exploitation on resident lake populations	Fish -small lake inventory	Morice TSA	MELP mandate	new	60,000	60,000	0	0	0	MELP	Highest	Highest		NA	No		
M6	(TSR) Char Mgmt Committee	Uncertain distribution & exploitation of critical habitats for species of concern	Fish Large Lake - Char Inventory	Morice TSA Babine, Morrison, Morice, Fulton, Nechako Reservoir, Tochcha Lakes	TSR Mo13	new	100,000	100,000	100,000	0	0	MELP	Highest	Highest	Low	NA	No	Not on Morice wildlife list. MELP mandate	
M8	Fisheries Mgmt	Identification of resource use	Fish ST River Guardian Program	Morice TSA Bulkley and Morice TSAs	Bulkley Angling Use Plan	new	60,000	0	0	0	0	MELP	High	High		NA	No		
					Total $		**1,668,500**	**1,517,500**	**610,000**	**120,000**	**0**								**$798,000**

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely for MYA funding
NC1	(TSR)		TEM to finish TFL	N Coast TFL 25 Block 5	No TSR instructions	new	40,000	0	0	0	0	WFP	High		High	High	Yes	to complete	40,000
NC2	(TSR)		VRI phase 1 and 2	N Coast TFL 25 Block 5	No TSR instructions	new	0	300,000	300,000	235,000	0	WFP	Medium		Medium	Medium	Yes		
NC3	(TSR))		TSM to complete classification for the TFL. Project could be expanded to include non TFL land on island	N Coast TFL 25 Block 5 - princess Royal	No TSR instructions	new	50,000	0	0	0	0	WFP	High	NA	Medium	High	Yes	to complete	50,000
NC4	TSR	incomplete information on distribution and subspecies status of Kermode bear populations of	Wildlife Project on genetic relatedness of Kermode populations and project effects on changing gene flow. Last year	N Coast TFL25 Block 5 especially islands near and including Princess Royal	MWP 25-11 and 25-15	existing	30,000	0	0	0	0	WFP	High	High	Medium	NA	Yes		30,000
NC5	TSR	Lack of information on marbled murrelet nesting habitat choice at landscape and stand level in much of the CWH	Wildlife complete marbled murrelet nesting suitability and capability model development and mapping based the radio telemetry work from summer 1999. Last year (NOT IN WFP PLAN)	N Coast TFL25 Block5 CWHvm and MHmm1 in Mussel Inlet and Sheep passage	MWP 25-11 and 25-15	existing	40,000	0	0	0	0	MELP/ WFP	?	High	Medium	NA	Yes		40,000
NC6	LRMP) (TSR) SOE operations	Imagery for inventories and operations is out of date (1992) Imagery acquisition to update TRIM base, and all inventories using Softcopy technology	TRIM 2 1:30,000 imagery	N Coast TSA	No TSR instructions	New	220,000	0	0	0	0	MoF region and districts	High		High	Highest	Yes	Is this project under regional control? No not necessarily	
NC7	(TSR)	ESAs for soils are not reflecting soil types. ESAs for wildlife need updating. Need this information for better TSR net downs	PEM and TSM ground data collection for input into predictive models	N Coast TSA	No TSR instructions	New	0	21,000	21,000		0	MoF distnct and region	High		High	High	Yes	No not Jim Schwab's project it is for TSR netdowns	
NC8	TSR	Concerns over threats to biodiversity and old growth Biogeoclimatic ecosystem classification has errors. Need ecosystem mapping for IRM interpretations	PEM Predictive Ecosystem Mapping. Revise BEC mapping using ground data and predictive models	N Coast TSA	TSR No-12	New	0	0	80,000		0	MoF distnct and region	High		Medium	Medium	Yes		
NC9	TSR	errors in site index estimation for determining the productivity of second growth stands	G&Y Represented vs. Potential site index study for TSR3	N Coast TSA	TSR No-4,No 14	New	43,000	0	0	0	0	MoF region	High	NA	High	High	Yes	Highest priority for district likely unfunded from MYA **CRITICAL**	
NC10	(LRMP)	current AOA is not sufficient to indicate where licensees must manage for AIAs	AOA at 1:20,000	N Coast TSA	LRMP about to start - FN negotiation table	New	100,000	100,000	0	0	0	MoF distnct/West Fraser/Interfor	Highest-	NA	High	High	Yes	West Fraser and Interfor contributing. Costs reduced to $100,000. NC 19 and NC 21 deleted. Is there enough funding for this? **CRITICAL**	100,000
NC11	(LRMP)	sustain working relationship with FNs	TUS Kitamaat Village council (Haisla) to complete	N Coast TSA	LRMP about to start FN negotiation table	existing	209,495	0	0	0	0	Kitimaat Village	Highest	NA	High	Highest	Yes	Funded from MoF headquarters	

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5years					Proponent Name	Priority					Comments	Likely for MYA funding
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent	MELP	MoF District	MoF Region	FRBC eligible		
NC12	(TSR) (LRMP)	sustain working relationship with FNs	TUS Allied Tsimshian to complete	N. Coast TSA	LRMP about to start FN negotiation table	existing	114,207	0	0	0	0	Allied Tsimshian	Highest	NA	High	Highest	Yes	Funded from MoF headquarters	
NC13	TSR	inability to reflect the fluctuating market price for different timber species with current operability criteria	G&Y Operability study	N. Coast TSA	TSR para No-1, No2	New	40,000	0	0	0	0	MoF district	High	NA	High	High	Yes		
NC14	(LRMP)	meet visual quality objectives for scenic corridors during forest practices	Recreation Visual landscape inventory	N. Coast TSA	LRMP about to start	New	0	20,000,	0	0	0	MoF district	High	NA	High	High	Yes		
NC15	TSR (LRMP)	uncertainty around constraints on timber supply from riparian management	Fish habitat inventory at 1:20,000 to fill in gaps in information across contentious drainages	N. Coast TSA	TSR para No-13	New	20,000	20,000	40,000	20,000	0	MoF district	High		High	High	Yes	discussion on RIC standards	
NC16	(LRMP)	incomplete information on traditional use information for LUPs and LRMPs	TUS for Metlakatla	N. Coast TSA	No TSR instructions	new	0	250,000	0	0	0	Metlakatla	Medium	NA	Medium	Medium	Yes	Funded from MoF headquarters	
NC17	TSR	uncertainty around constraints on timber supply from riparian management	Fish habitat inventory at 1:20,000 to fill in gaps in information across contentious drainages	N. Coast TSA- West Fraser Chart - Stagoo drainage	TSR para No-13	New	0	27,000	0	0	0	West Fraser	Medium		High	NA	Yes	Look for linkage with NCFD	
NC18	TSR	uncertainty around constraints on timber supply from riparian management	Fish habitat inventory at 1:20,000 to fill in gaps in information across contentious drainages	N. Coast TSA- West Fraser Chart - Tsam Bay, Kitkiats, Kishkosh	TSR para No-13	New	0	45,000	0	0	0	West Fraser	Medium		High	NA	Yes	Look for linkage with NCFD	
NC20	(TSR)	ESAs for soils are not reflecting soil types. Need this information for better TSR net downs	TSM Level C at 1:20,000	N. Coast TSA - Interfor chart	No TSR instructions	existing	75,000	75,000	75,000	0	0	Interfor	High	NA	Medium	Medium	Yes		75,000
NC22	TSR	uncertainty around constraints on timber supply from riparian management	Fish habitat inventory at 1:20,000 to fill n gaps in information across contentious drainages	N. Coast TSA - West Fraser Chart - Kwinimass	TSR para No-13	New	45,000	0	0	0	0	West Fraser	High		High	NA	Yes	Look for linkage with NCFD	45,000
NC23	TSR	uncertainty around constraints on timber supply from riparian management	Fish habitat inventory at 1:20,000 to fill n gaps in information across contentious drainages	N. Coast TSA - West Fraser Chart - Whalen Lake	TSR para No-13	New	15,000	0	0	0	0	West Fraser	High		High	NA	Yes	Look for linkage with NCFD	15,000
NC24	(TSR)	ESAs for soils are not reflecting soil types. Need this information for better TSR net downs	TSM Level C at 1:20,000	N. Coast TSA - West Fraser Chart Kish kosh Kitkiats drainage	No TSR instructions	New	60,000	0	0	0	0	West Fraser	High	NA	Medium	Medium	Yes		60,000
NC25	(TSR)	ESAs for soils are not reflecting soil types. Need this information for better TSR net downs	TSM level C at 1:20,000	N. Coast TSA - West Fraser Chart Stagoo, Roundy and Tsam Bay	No TSR instructions	New	0	55,000	0	0	0	West Fraser	Medium	NA	Medium	Medium	Yes		
NC26	TSR (LRMP)	Incomplete information on distribution of sandhill crane breeding areas for WHAs	Wildlife inventory sandhill crane breeding areas	N. Coast TSA and TFL25-5 islands north of Princess Royal	TSR para No-13, 25-11,25-15	New	0	90,000	90,000	0	0	MELP	Medium	Medium	Medium	NA	Yes		

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely for MYA funding
NC27	TSR (LRMP)	Lack of information on marbled murrelet nesting habitat choice at landscape and stand level in much of the CWH	Wildlife ground truth a preliminary habitat suitability model for marbled murrelet using radio telemetry of females for nest detection , or radar and auditory /visual detection surveys	N. Coast TSA CWHvh, CWHwm and CWHws throughout North Coast . Portland canal would be an excellent study area	TSR para No 12 No-13	New	0	175,000	150,000	0	0	MELP	Highest	Highest	Medium	NA	Yes	Defer until the WFP results then spread out if warrented $ moved one year	
NC28	SOE MELP Char committee	Incomplete information on fish distributions and habitat use for MELP Char committee	Fish Small lakes inventory Dolly Varden & cuttthroat trout target species	N. Coast TSA Laredo, Keecha Creek, Kumowdah, North Banks Island, Middle Banks Island & Khutze River WSG	No TSR rationale BC MELP Fisheries Strategic Plan Goal to conserve wild fish stocks	new	90,000	90,000	90,000	0	0	MELP (CRII)	High	High	Low	NA	No	MELP mandate	
NC29	TSR	Incomplete information on fish distributions and habitat use	Fish Intensive Inventory of species and habitat within the 6 % of TSA land considered operable	N. Coast TSA lower Nass watershed tributaries	TSR No 12	new	40,000	40,000	0	0	0	MELP	High	High	high	Medium	Yes	discussion needed on RIC standards	
NC30	TSR	uncertainty regarding strategies for managing porcupine populations	Forest health adaptive management trials to reduce porcupine damage in young plantations- especially the use of alternative silviculture prescriptions **(CONSIDERABLE RESEARCH GAS ALREADY BEEN DONE AT UBC - part costs could be covered)**	N. Coast TSA northern half	TSR para No 5 and 9	new	0	250,000	250,000	100,000	100,000	MELP	Medium	Medium	Medium	High (for $25,000)	Yes	Comment from regional forest health section Costs are high Is this project necessary (CONSIDERABLE RESEARCH GAS ALREADY BEEN DONE AT UBC - part costs could be covered)	
NC31	TSR	Incomplete life history information on fish species associated with stream classifications	Fish -Life History Studies on winter/spring run ST, DV, CT in coastal rivers and streams	N. Coast TSA Triumph, Canoona, Lachmach and tribs. to Work Channel, Nass & Princess Royal Island	TSR No13	new	45,000	45,000	25,000	0	0	MELP	Highest	Highest	Low	NA	Yes		
NC32	TSR	Incomplete information on fish-stream classifications for riparian netdowns	Fish Habitat Inventory 1:20,000 Reconnaissance	N. Coast TSA watershed areas greater than 3rd order within operational areas	TSR No13	new	85,000	85,000	85,000	0	0	MELP	High	High	Medium	NA	Yes		
					Total $		**1,361,702**	**1,668,000**	**1,200,000**	**355,000**	**100,000**							Yikes 100,000 short	**455,000**

ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	$ required over 5years					Proponent Name	Priority					Comments	Likely for funding through FRBC
							2000/01	2001/02	2002/03	2003/04	2004/05		Proponent priority	MELP	MoF District	MoF Region	FRBC eligible		
C2	TSR (LRMP)	Out of date and poor inventory (audited) from which almost all forest and wildlife interpretations are made Overestimation of mature volumes in the Dease Liard by 30% because of old inventory attributes, Large polygon delineation, poor model calibration	TRIM 2 imagery acquisition at 1:30,000 including scanning and digital models	Cassiar TSA-	TSR C8	existing	350,000	0	0	0	0	MoF region	High		High	High	Yes		
C3	TSR (LRMP	Out of date and poor inventory (audited)from which almost all forest and wildlife interpretations are made Overestimation of mature volumes in the Dease Liard by 30% because of old inventory attributes, Large polygon delineation, poor model calibration	VRI phase 1 retrofit to standards Seed funding ($50,000) was provided for this project in 1999 by FRBC The scope of the project is far too large to be done in tiny bits	Cassiar TSA -	TSR C8	existing	0	1,500,000	1,000,000	1,000,000	0	MoF region	High		High	High	Yes	funding from MoF FRBC funding from tandbased funding	$50,000
C1	(LRMP) (TSR)	lack of information on trail location and condition in order to buffer for TSR and costs to upgrade for recreational use	Recreation trail inventory for recreation access Management plan and distinct recreation strategy	Cassiar TSA	no TSR instructions	new	10,000	0	0	0	0	MoF distnct	High	NA	Low	Medium	Yes		
C6	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife Aenal inventory with ground truthing of Trumpeter Swan nesting areas	Cassiar TSA - Liard Basin	TSR C16, C17	new	90,000	0	0	0	0	MELP	High	High	Low	NA	Yes		
C8	TSR (LRMP)	Uncertain distribution of red and blue listed species within FD	Wildlife Inventory for presence / not detected for bat species, with special interest in Northern Long-eared Myotis	Cassiar TSA - low elevation wetlands	TSR C17 & C21:	New	50,000	50,000	0	0	0	MELP	High	High	Low	NA	Yes		
C9	TSR (LRMP)	Uncertain effects of changing fire return interval and changing fire size on deciduous habitat supply	Wildlife Inventory deciduous stand development post fire, especially in npanan areas Research on differential growth and consumption rates of deciduous species when subjected to foraging pressure (Beaver and Moose) in different patch sizes	Cassiar TSA BWBS in Cassiar FD	TSR C16 and C20	New	70,000	70,000	70,000	0	0	MELP	High	High	Low	NA	Yes		
C10	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife GPS Radio telemetry of mountain goats to determine critical ranges, connectivity of ranges, access mgmt	Cassiar TSA Iskut drainage Tatogga	TSR C4, C14, C17	new	250,000	120,000	120,000	120,000	0	MELP	High	High	Low	NA	Yes		

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent priority	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely for funding through FRBC
C12	TSR (LRMP)	Uncertain distribution of critical habitats and access issues for species of concern	Fish small lakes inventory Lake char target species	Cassiar TSA Liard, Taku, & Yukon WS	TSR C4, C14, C17	New	120,000	120,000	120,000	120,000	0	MELP	High	High	low	NA	Yes		
C13	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife Aerial inventory with ground truthing of Trumpeter Swan wintering areas	Cassiar TSA Lower Iskut - Stikine drainages and estuary	TSR C16, C17	new	50,000	0	0	0	0	MELP	High	High	Low	NA	Yes		
C15	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Fish & Fish Habitat Inventory 1:50,000 Overview	Cassiar TSA Stikine Watershed Groups	TSR C4, C14, C17	New	150,000	150,000	150,000	150,000	150,000	MELP	High	High	Low	NA	Yes		
C16	TSR (LRMP)	Uncertain distribution of critical habitats and access issues for species of concern	Fish Life history studies on identified Bull Trout & RB/ST populations	Cassiar TSA Stikine Watershed Groups	TSR C4, C14, C17	New	75,000	75,000	75,000	75,000	0	MELP	High	High	Low	NA	Yes		
C17	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Fish & Fish Habitat Inventory 1:50,000 Overview	Cassiar TSA Taku watershed Groups	TSR C4, C14, C17	New	100,000	100,000	100,000	100,000	0	MELP	High	High	Low	NA	Yes		
C18	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Fish Trans-boundary Rivers Inventory	Cassiar TSA Taku/Stikine Rivers WS	TSR C4, C14, C17	New	100,000	100,000	0	0	0	MELP	High	High	Low	NA	Yes		
C19	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Fish Large Lake Inventory - Trans-boundary (Yukon - BC)	Cassiar TSA Yukon Watershed	TSR C4, C14, C17	New	50,000	50,000	50,000	0	0	MELP	Highest	Highest	Low	NA	Yes		
C7	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife Radio telemetry of caribou and moose to determine movements, critical habitats and mechanics of habitat selection	Cassiar TSA - Liard basin / Horseranch	TSR C4, C14, C17	existing	125,000	125,000	125,000	125,000	0	MELP	Highest	Highest	Medium	Na	Yes		
C11	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife Radio telemetry of caribou and moose to determine movements, critical habitats and mechanics of habitat selection	Cassiar TSA Klappan R. valley	TSR C4, C14, C17	new	300,000	300,000	150,000	150,000	0	MELP	High	High	Medium	NA	Yes		
C14	TSR (LRMP)	Uncertain distribution of critical habitats for species of concern	Wildlife GPS radio telemetry of moose in ICHvc & ICHwc to identify critical habitats and movement corridors	Cassiar TSA Middle Iskut drainage	TSR C4, C14, C17	new	250,000	120,000	120,000	120,000	0	MELP	High	High	Medium	NA	Yes		
C20	TSR	Resolve uncertainty with respect to operability mapping and terrain stability studies	Reconnaissance Terrain Stability Mapping using predictive mapping technologies (SINMAP)	Cassiar TSA	TSR C3	New	50,000	0	0	0	0	MoF region	High	NA		High	Yes		
					Total $		2,190,000	2,880,000	2,080,000	1,960,000	150,000								$50,000

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely for MYA funding
R1	TSR (LRMP) SOE	Annual summary of forest health conditions for the region Reequirement in almost all TSRs to monitor non-recoverable losses	Forest health aenal overview surveys. Annual overview flights conducted by the regional entomologist and pathologist in all distncts	Regional	TSR B1, C5, Kx 12, Mo12, N18, No6	existing	40,000	40,000	40,000	40,000	40,000	MoF region	High	NA	High	High	Yes	cntcal	
R2	(TSR) (LRMP) (SOE)	accurate estimates of forest productivity. Monitonng of growth and mortality rates Determine impact of diseases and, insects and other natural causes. Meet provincial &Y needs as laid out by the forest productivity council	G&Y permanent sample plot re-measurements **ANNUAL IN PERPETUITY**	Regional - All distncts depending on year	no explicit statement PSP data is used for all yield modelling for TSRs, LRMPs and SOE	existing	114,000	45,000	162,000	132,000	100,000	MoF region and distncts/ HFP (Monce)	High	NA	High	High	Yes	cntcal	
R3	TSR LRMP	lack of ecological mapping to site series across TSAs. Cost of providing such mapping through TEM is prohibitive. Need for ecological mapping for better estimates of site productivity, basis for identifying rare and endangered ecosystems and modelling h	Predictive Ecosystem Mapping ECOGEN model development The project was started in 1998 - 1999 with seed funding The project is a co-operative arrangement between MoF research and the prince Rupert Forest Region and is endorsed by the TEM alternatives	Regional entire Prince Rupert Forest Region	TSR instructions from various TSAs	existing	210,000	50,000	50,000	50,000	0	MoF region	High			High	Yes		
R4	(LRMP) (TSR)	objective and quantitative approach for the prediction of post logging stability	TSM landslide inventory identification of terrain subject to landslides following logging or road building. Collection of data on slope failures in different types of terrain so that reliable cntena are used by TSM mappers	Regional N Coast, Cassiar, Kalum	No TSR instructions	existing	25,000	25,000	0	0	0	MoF region	High	NA		Medium	Yes		
R5	(TSR) (LRMP) (SOE)	depletion of mature timber by harvesting, wildfire and roads	Forest Cover/Vegetation cover update using satellite imagery/ GPS and Digital exchange agreements **(NOT FRBC ELIGIBLE)**	Regional all distnct	MoF Mandate	existing	50,000	50,000	50,000	50,000	50,000	MELP Region and distncts	High	NA	Highest	High	No	Not FRBC eligible	
R6	(TSR) (LRMP) (SOE)	lack of knowledge on how to reforest and maintain roads and drainage structures on highly productive alluvial fans.	Water - Research - Forest Management and restoration of alluvial fans	Regional Bulkley, Kalum, North coast Kispiox Morice	No TSR instructions	new	40,000	40,000	40,000	0	0	MoF region	Medium			Medium	Yes		

							$ required over 5years						Priority						
ID	Strategic Decision	Knowledge gap (describe)	Work required	Location	Authority	Status	2000/01	2001/02	2002/03	2003/04	2004/05	Proponent Name	Proponent	MELP	MoF District	MoF Region	FRBC eligible	Comments	Likely for MYA funding
R7	TSR, LRMP	lack of information on critical habitat locations for Mountain goats (licks, natal,	Wildlife - Ground and aerial surveys of goat range in different season	Regional Kalum TSA/Nass TSA, TFL1, TFL41, TFL25	TSR N-14 an N-16 ,NO 12, MWP 25-11 and 25-15 LRMP-"goat escape terrain"	New	225,000	150,000	150,000	0	0	MELP	High	High		NA	yes		
R8	LRMP SOE	Peakflow data for small streams required to design drainage structures that limit erosion, maintain fish passage and allow for water and bed load passage	Water - small stream gauging completed by Water Survey of Canada	Regional Kalum/Nass TSA, Bulkley, Lakes Kispiox and Morice TSAs	Kalum LRMP "maintain aquatic values"	existing	120,000	120,000	120,000	60,000	30,000	MoF region	High			High	yes	critical	
R9	TSR	incomplete information on stream specific distribution of tailed frogs for development of WHAs	Wildlife -Test a model for predicting tailed frog distributions	Regional Nass TSA, N. Coast TSA - TFL1, TFL41, TFL25-5	TSR N-14 , N 16 , No13, MWP 25-11 and 25-15	New	180,000	180,000	0	0	0	MELP	High	High	Low	NA	Yes		
R10	LRMP (TSR)	lack of baseline water quality data necessary to establish objectives monitor objective attainment and determine the impact of logging activities on high value fish habitat and domestic water	Water - rivers ecosystems impact assessment of forest harvesting activities on water quality , fish and high value fish habitat on priority watersheds	Regional North Coast, Kalum, Kispiox, Bulkley, Morice, Lakes	No TSR instructions Kalum LRMP "maintain aquatic values"	existing	30,000	30,000	30,000	30,000	30,000	MELP	High	High	Medium (Kalum)	NA	Yes		
R12	(TSR) (LRMP)	incomplete information losses to disease	Forest Health trials. Annual remeasurement of existing forest disease trials in distncts	Regional	No specific TSR instructions	existing	24,000	24,000	24,000	24,000	24,000	MOF Region	High	NA	unknown	High	Yes	critical	
R13		lack of data to determine shut down times for forest operations due to heavy rainfall	Water -	Regional - largely for North coast	No specific TSR instructions	new	50,000	50,000											
					Total $		1,108,000	804,000	666,000	386,000	274,000								0

Appendix 2

Minutes of the Regional Interagency Meeting for RMP Ground Rule Development

Participants

Ministry of Forests	Ministry of Environment, Lands and Parks	Forest Renewal BC
Don Gosnell	Doug Johnston	Butch Morningstar
Neil Endacott	Don Reid	
Ruth Edwards	Paul Giroux	
Howard Debeck	Jeff Lough	

Date: June 29, 1999
Time: 09:00 - 15:00
Location: Forest Renewal Boardroom

Items:

1) **Purpose of meeting** introduced by Butch as establishment of agreement (**Ground Rules**) as to details around development of the Resource Management Planning process as led by the Ministries of Forests and Environment, Lands and Parks. Also, that issues around RMP development and the meeting of the requirements of that part of the planning portion of the ministry Services Agreement would be clear.
2) **The role of the Resource Management Planning process was discussed in the context of the Investment Planning Process.** It was established that the resource management plans; as developed by the ministries and other stakeholders as agreed and appropriate, would form the list of opportunities from which Forest Renewal would make it's investments for the future. The RMP process will be led by the ministries while the delineation of the district and strategic objective (and program) splits of investment levels would be established by Forest Renewal after the completion of the RMPs. Introduction of the planning process was provided to licensees and other (First Nations) stakeholders by Forest Renewal over the past week. Further discussion of the RMP process will occur during meetings in Terrace and Houston on July 7 and 8 respectively. Ministries, Forest Renewal and Multi Year Agreement holders will attend.
3) **Most of the meeting revolved around the RMP process and the following were agreed upon as ground rules:**
   a) **Geographic Units:**
      i) Silviculture - District is basis for planning; objectives and strategies by rolled up (if multiple) TSAs, and by TFL as distinct units. Cassiar TSA will be dealt with as a separate unit from the Bulkley TSA.
      ii) WRP - Key watersheds will be identified at the regional level by MoF and MELP. The agencies will also determine the operational units (watershed level, landscape

level, etc.). The key units will be used as prioritization units at district level, rolled up to district priorities and further rolled into a regional plan.

iii) Inventory - By inventory type, by district and rolled into a regional plan.

b) Who leads process, who is directly involved, who contributes and how:

i) Silviculture - Ministry of Forest leads, licensees have direct input, existing proponents input accepted for consideration where put forward or requested. Other stakeholders input into silvicultural development is and continues to be through the LRMP process which drives objectives. Licensees will lead on TFLs. Current RMPs will be used as a starting point, participant input will be sought and adjustments made to existing plans for this planning year. Substantive agreement is sought on the objectives and strategies by geographic unit as well as the list of opportunities developed.

ii) WRP - MoF/MELP establish and identify key watersheds, district MoF staff lead process for prioritizing top 20% for treatment, those to be transitioned out of, those not on top 20% but with good chance of success. Details of the work to be done (i.e. at activity level) are to be done at the work plan stage. RMPs identify the priority watersheds to be worked on. MYA holders directly involved. DFO also invited to provide input as to fish habitat priorities. These participants provide information as to who has information that would be specifically applicable to the RMP development. Those that have technical input for the RMP will be asked to participate in the development of specific parts of the RMP.

iii) Inventory - Coordinated at the regional level. Ministries will define guidelines for input and request input from licensees. Questionaires (request for specific input) will be developed and provided to licensees so that consistent input can be obtained (these inputs will be derived from the planning guidelines). The plan will then be assembled by the regional ministry staff and reviewed for substantive agreement by licensees (with adjustments as necessary).

c) Roles and Responsibilities of Participants:

i) Participation of stakeholders (licensees, others - as defined above) will be requested by the ministries leading the process with timelines appropriate to the reasonable completion of the RMPs.

ii) Licensees and other participants must provide input in a timely fashion where provided with reasonable opportunity to participate in the process.

iii) The ministries will document the level of participation and opportunity provided to stakeholders and include this documentation in the progress report.

iv) Participants of RMP process will provide technical information consistent with the RMP guidelines. The RMP process is not a forum for input of values of a social or investment planning nature.

d) Process for RMP Development:

i) WRP

(1) Regional identification of key watersheds (watershed atlas)

(2) District consultation with stakeholders - determine priority of watershed opportunities by determining which watersheds 1) are not a future priority and should be transitioned out of; 2) the key watershed to be worked on and completed within 5 years; and 3) the watersheds to be worked on but not to be

completed within 5 years. These make up the RMP. Details of the activities within priority watersheds are to be developed at the work plan stage.

ii) Silviculture
  (1) MoF and licensees will meet to determine and refine objectives and strategies. Previous year plans used as start point and 'tweaked' by adding licensee input.
  (2) TFL process will be led by licensee.
  (3) A silviculture strategies contract is being developed for next year's planning process. The strategies and plans arising from this contract will be discussed with licensees prior to implementation.
  (4) Silviculture opportunities will be based on agreed upon strategies and objectives.

iii) **Inventory**
  (1) As described above in section b).

e) **Forest Renewal Input into RMP Process**
  i) Overall guiding (notional) investment level estimates (regional, district splits, program splits). Final numbers to be developed within investment planning phase after RMPs developed (i.e. RMPs to assist in determining final allocations).
  ii) Overview of strategic plan and how it guides RMP process.
  iii) How RMPs will be used in planning process.

f) **RMP Content**
  i) Silviculture
    (1) Criteria, strategies, objectives and ground rules to be established by MoF/Licensees
    (2) Opportunities within the strategies to be identified by licensees with MoF support
    (3) Priorities ranked by strategy direction and selection based on agreed on list of opportunities.
  ii) Inventory
    (1) Inventories to be listed by priority by district, where all inventory types are ranked against one another.
    (2) Assumes that capability to deliver inventory exists, if not, opportunity for investment may change.
    (3) Priorities set from questionaires, included in the plan, and reviewed by participants as discussed above.
  iii) WRP
    (1) Key watersheds identified
    (2) Top 20% to be completed over the next 5 years
    (3) Watersheds to transition out of
    (4) Priorities for watersheds to be completed after 5 years

g) **Cost Estimates**
  i) Silviculture - to be included by opportunity identified
  ii) Inventory - to be included by inventory opportunity
  iii) WRP - to be included where reasonable information is available

h) **General**

i) Ranking of priorities and opportunities will be tied directly to objectives and strategies of plan. Objectives and strategies are developed by main stakeholders and using RMP guidelines.
ii) Each RMP will have a discussion of objectives and strategies.
iii) Draft report will be completed and delivered to Forest Renewal by August 30 and include:
(1) Silviculture - objectives and strategies by geographic unit
(2) WRP - Objectives and strategies, identification of key watersheds, identification of transitional watersheds
(3) Inventory - Objectives and strategies, questionaires developed, distributed and input received.
(4) Progress report - summary of stakeholder participation, summary of progress on RMPs.

i) **Conflict Resolution around determination of priorities**
i) Preventive measures prefered over reactionary:
(1) Ground rules established by participants prior to plan establishment
(2) Substantive agreement desired on objectives and strategies
(3) Priorities must fit with established objectives and strategies
(4) RMP guidelines provide direction for development of objectives, strategies and priorities
ii) Where conflict arises that cannot be resolved locally, Ministry regional coordinators will make first attempt at resolution.
iii) Where conflict cannot be resolved by regional coordinators, issue will be referred to FRBC director.
iv) General rule is to proceed to objectives with best efforts and using best information available. Where complete information is not available, or optimal solution not available, make best decisions possible. If necessary, adjustments may be made later when better information, or resources available.
v) The RMPs in the end, will be **THE** list of opportunities and priorities to invest from. The highest priorities and value opportunities identified will be selected for investment.

4) **IP process (FRBC)**
a) Mainly discussed earlier; Recreation program will be removed from the Forests and Environment investments in 00/01. Land based training will be incorporated into F&E work plans and funded from multi year funds where required. Guidelines are developed at the regional level.

Appendix 3

Supporting documentation

From: Edwards, Ruth H FOR:EX
Sent: Friday, July 16, 1999 1:41 PM
To: 'Sherry Maine'; 'Tan Calhoun'; 'vandolah@hwy16.com'; 'john_brockley@northwood.ca'; 'deidre_quinlan@weldwood.com'; 'mike_dunbar@weldwood.com'; 'abaxt@westfrasertimber.ca'; 'jay@mail.bulkley .net'; MacDonald, Archie NET:IN; 'mview@mail.bulkley.net'; 'dignas@ntc.bc.ca'; 'Damian Keating'; 'llogg@WestFraserTimber.ca'; 'andrew_mackay@interfor.com'; 'owen_fewer@interfor.com'; 'khall@westernforest.com'; Hanna, Lisa I FOR:EX; Quinn, Bill FOR:EX; Parry, Norm FOR:EX; Wilson, Bob J FOR:EX; Grainger, Mike FOR:EX; Waszkiewicz, Marek X FOR:EX; Bernard, Agathe FOR:EX; Copley, Bob O FOR:EX; Saunders, Liz FOR:EX; Ouellet, Francois F FOR:EX; Price, Mark FOR:EX; Cuzner, Davide FOR:EX; Rawling, Greg FOR:EX; 'Kevin Derow'; Stadey, Will FOR:EX; Stevens, Carolyn FOR:EX; Alex Woods; Allen Banner; Ann Morrison; Bobby Love; Boyd Brown; Brian FUHR; Dana ATAGI; Dave Wilford; David Maloney; Debbie Cichowski; Don Reid; Doug JOHNSTON; Ian SHARPE; Jim Schwab; Ken White; Lisa WESTENHOFER; Lloyd Davies; Paul GIROUX; Sean SHARPE
Cc: Gosnell, Don FOR:EX; Morningstar, Butch FRBC:EX; Macaulay, Natalie M FOR:EX
Subject: Resource Management Plan - Inventory
Importance: High

Resource Management Plans - Forest Renewal's Sustainable Objective #3 (Inventory and Research)

MoF and MoELP are required under the terms of their contract with Forest Renewal BC to prepare Resource Management Plans (RMPs) for each of FRBC's "Strategic Objectives". They are also required to solicit input from stakeholders for these plans.

MoELP and MoF have decided, in consultation with FRBC, to solicit input to the RMP for Sustainable Objective #3 in the following manner:

1. send out questionnaires to all stakeholders on proposed and in process inventory and research projects by **July 16th, 1999**;
2. receive completed questionnaires by **August 20th, 1999;**
3. roll up and rank the input from the questionnaires into a DRAFT RMP;
4. return the draft to FRBC, MYA holders and districts by **August 30th,1999**
5. receive comments on draft to by **September17th, 1999**;
6. present final RMP to FRBC for **September 30th, 1999**.

RMPinput.doc

Please return the questionnaires to me
by fax : (250) 847-7217; or e-mail Ruth.Edwards@gems4.gov.bc.ca : No later than August 20th, 1999.

The questionnaire will be used to:

- input the proposed project into the RMPs;
- rank the project by inventory type, by district by region;
- Identify FRBC eligible inventories for input into the FRBC Investment Plan; and
- Identify high priority projects that are not eligible for FRBC funding, but where funding is urgently needed.

I have attached several documents as references for this process.

1. RMPs and Appendices from **last year**. These have last years' ranking. This will be modified this year based on provincial criteria and objective scrutiny of the questionnaires (see Appendix 3-Guidelines for the Strengthening Sustainable Forest Management at the following web site http://www.for.gov.bc.ca/CPP/rmpguidelines/).
2. LRMP implementation plan issues that need to be addressed.
3. Comments from the Chief Forester's AAC determination process.

RMP_98 doc

Inv_Ap98 doc

LRMP doc

TSA_RPR doc

If you cannot receive the attached documents and want hard copies sent by mail please contact: Natalie Macaulay (Natalie.Macaulay@gems4.gov.bc.ca or Tel: 847- 7758), or Bobby Love (Bobby.Love@gems7.gov.bc.ca or Tel: 847- 7517

Ruth Edwards RPF
LEM Officer
Ministry of Forests
Prince Rupert Forest Region
Bag 5000, Smithers BC Tel: (250) 847-7759
Canada Fax: (250) 847-7217

Prince Rupert Forest Region

Morice TSA—Morice Forest District

Instruction	Key Word	Responsible	Progress	Also DAWG√	Comments	Para #
Identify operability lines on the TSA map sheets	operability	reg/dist	Not in Progress	1.2	Funded at present but funding likely to be used for other district priorities	Mo1
Reconcile recreation ESAs with the more recent recreation inventory	ESAs, recreation inventory	reg/dist	Not in Progress	1.4	Subject to Rec re-inventory/FRBC funding: or a review will be made prior to data package development	Mo2
Re-examine management strategies for ESA1s and ESA2s and their corresponding incorporation in or exclusion from the timber harvesting land base	ESA 1 lands	reg/dist	In Progress	1.4	Just beginning review/soils are depending on TSAM/FRBC funding	Mo3
Continue to monitor harvesting performance on low-productivity sites and review productivity criteria. (Review volume decay, waste estimation standards—RIB comment)	low-productivity sites	reg/dist	In Progress	1.2/1.3/4.6	Inventory audit in 1997 should provide some statistical validity to site index as defined in the reinventory of 1991. Also, district is currently viewing NWPT info on leading P1 stands with low volumes	Mo5
Continue to monitor waste and breakage losses in mature and old-growth balsam-leading stands	waste and breakage	reg/dist	Complete	2.10	Review completed (RIB comment)	Mo8

Upon release of the "Management of Identified Wildlife Guidebook", develop a strategy for critical and at risk wildlife management in cooperation with staff from the Ministry of Environment, Lands and Parks	wildlife management	reg/dist	Not complete	3.7	District is waiting for release of "Management of Identified Wildlife Guidebook"	Mo13

Prince Rupert Forest Region

Nass TSA—Kalum Forest District

Instruction	Key Word	Responsible	Progress	Also DAWG√	Comments	Para #
District staff should continue to monitor performance to evaluate the relative proportions of harvesting operations in areas operable for different harvesting systems, in order to ensure that areas operable for cable technologies contribute a larger portion of future harvests than they have to date. The results of this monitoring and evaluation will form an important consideration in defining the timber harvesting land base for, or the need to use partitioning in the next AAC determination	harvesting systems	reg/dist		1.2		N1
District staff should continue to examine the likely extent to which the Upper Nass area will be accessible and economically feasible for timber harvesting	Upper Nass/timber harvesting	reg/dist		4.6/1.2		N2
The statistical volume-ration sampling audit for the Nass TSA should be completed as soon as scheduling permits, to resolve uncertainty in the estimation of timber volumes in existing stands	inventory audit	RIB	Complete	Completed		N3

The site productivity "paired plot" survey for the Nass TSA should be completed as soon as scheduling permits, to provide statistically valid information from which to estimate reliably whether the site productivity of regenerated stands in this area is being underestimated by inventory data	site productivity	RIB/FPB/TSB/RB	In Progress	2.2	OGSI	N4
As discussed...staff should work to improve understanding of the number of harvest passes required and the period needed to reach green-up conditions and meet IRM objectives	adjacency/green-up		reg/dist	3.1/3.4		N5
District staff should continue to examine the extent to which climatic and soil conditions, particularly in the northern portion of the Nass TSA (Bell Irving and Upper Nass), hinder prompt and successful regeneration. The objective of this work should be to ensure application of appropriate silvicultural systems, and if necessary to adjust the timber harvesting land base for the next AAC determination for the Nass TSA	regeneration	reg/dist	In Progress	2.8	Initial tasks complete	N6

Prince Rupert Forest Region

North Coast TSA—North Coast Forest District

Instruction	Key Word	Responsible	Progress	Also DAWG√	Comments	Para #
Revolve uncertainty with respect to the location and extent of the new volumes now rendered economically operable by the recent sharp increases in fibre prices	economic operable	reg/dist/HQ	Complete	1.2	Completed in district	No1
Resolve uncertainty with respect to the location and extent of the volumes now potentially accessible in low sites, height class 2 stands, and cypress-leading stands, and the operational requirements necessary to harvest and reforest those areas	low site height class/cypress leading stands	reg/dist/HQ	In Progress		FRBC proposal submitted by the Prince Rupert Forest Region Research Group	No2
Resolve uncertainty with respect to the degree to which existing mature volumes may be overestimated by the growth and yield model used in the timber supply analysis	growth and yield	reg/dist/HQ				No3
Resolve uncertainty with respect to the degree to which regenerated volumes may be under-estimated by the growth and yield model used in the timber supply analysis	growth and yield	reg/dist/HQ/ TSB	In Progress	2.2	OGSI data collection to be completed in 1997; data analysis and results to follow in 1998	No4

Resolve uncertainty with respect to the degree of volume at risk to porcupine damage and the possible strategies to deal with this threat	porcupine damage	reg/dist/HQ				No5
Resolve uncertainty with respect to the degree to which unsalvaged losses may currently be under-estimated	non-recoverable losses	reg/dist/HQ	In Progress	4.4	Ongoing. Uncertain if can be resolved. Blowdown inventory Business Plan funding pressure	No6

LRMP ISSUES

REGION	LAND USE PLAN	STATUS	ISSUES
Prince Rupert	Bulkley	Approved - implementation phase.	High wildlife areas in agriculture/wildlife zones. Goat baseline data for Howson. District lake classification. Caribou habitat monitoring. 1:50,000 habitat inventory for priority species. Critical spawning areas and limiting habitat requirements. Evaluate impacts of snowmobiles on goat populations in Silvern Lakes. Direction for watershed assessments in various watersheds.
	Cassiar Iskut-Stikine	Plan in progress.	Inventories for bull trout. Economic development initiatives related to plan implementation.
	Kalum	Plan in progress.	Cost-implication analysis. Goat escape terrain mapping. Implementation tasks related to inventory (undefined). Pine mushroom inventory.

	Kispiox	Approved - implementation phase.	Recreation inventory. Field confirmation and fine-tuning of wildlife suitability mapping (wildlife inventory). Erosion potential inventory for Kispiox River. Sediment source inventory for Kispiox watershed. Pine mushroom inventory. Telegraph trail inventory. Inventory of biological integrity conditions in Kispiox watershed.

	Lakes	Plan in progress.	For species of concern, prepare and maintain an inventory of red and blue listed species. For water, inventory and classify lake, lakeshore, wetland and riparian areas. For agriculture/settlement zone: • improve agricultural inventories (land capability, use, soils, other values); • verify/improve agriculture inventories; • develop and maintain inventory of land capability and use; • improve soils and arability mapping; • inventory agricultural lands with potential for low conflict; • key habitats and biodiversity values; • suitable arable soils; • existing forestry investment and potential woodlot opportunities; and • identify areas with value for long term timber production.
	Queen Charlotte Islands-Haida Gwaii	Scoping in progress.	
	North Cassiar	No plan underway.	
	Kalum North	No plan underway.	

	North Coast	No plan underway.	
	Morice	No plan underway.	